

# **MÁTYÁS SEIBER'S TWELVE-TONE TECHNIQUE**

by

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A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctor of Musical Arts, The City University of New York

2010

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This manuscript has been read and accepted by the  
Graduate Faculty in Music in satisfaction of the  
dissertation requirement for the degree of Doctor of Musical Arts

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**ABSTRACT**

## MÁTYÁS SEIBER'S TWELVE-TONE TECHNIQUE

by

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This dissertation investigates the compositional style of Mátyás Seiber's twelve-tone music through an analysis of three works composed between 1934 and 1960: *String Quartet No. 2*, *Concert Piece for Violin and Piano*, and *Sonata for Violin and Piano*. Chapter 1 provides an overview of the composer's life and his compositional style. Chapter 2, on *String Quartet No. 2* (1934-5), examines the subdivisions of the twelve-tone series into smaller pitch-class sets and introduces the concept of families. Chapter 3, on *Concert Piece for Violin and Piano* (1953-4), demonstrates the permutation of and within tetrachords derived from the prime series and the use of families as "harmonic" areas in the conventional sense. Chapter 4, on *Sonata for Violin and Piano* (1960), analyzes the prime series according to certain patterns that develop from the combination of ordered positions. This chapter also shows how families, which represent "harmonic" areas, are used for modulation in the classical sense.

*In memory of my loving father, Soo Lee*

## Acknowledgements

I am deeply indebted to many people without whom this work would not have been possible. First, I would like to thank my advisor Professor Joseph N. Straus for his guidance, support, and unfailing wisdom. His encouraging words, patience, and quick feedback gave me the confidence to write this dissertation from the other side of the world.

I would like to offer special thanks to my former advisor Professor Philip Rupprecht for introducing me to Seiber's music and inspiring me to pursue this project. He guided me in the early stages and as part of the dissertation committee, provided valuable comments on the final draft. I extend my gratitude to my first reader Professor Jeff Nichols, and I would also like to thank the chair of my committee, Professor David M. Olan, for his assistance in seeing this dissertation through the final stages.

I would like to express my warmest thanks to my dear friend Mijung Koo who has so graciously helped me with her continuous advice and encouragement throughout the years. I thank my editor Alan Richtmyer for his effort, his attention to detail and the many hours he spent with me on the phone.

Finally, I owe all my achievements to my family, whose endless love and support has been my foundation. I am forever grateful to my mother and grandmother for their warmest love, sacrifice, and many years of prayers. I am deeply thankful to my loving fiancé, Kyoung Sun Back, for his endless understanding, emotional support, and encouragement. I thank him from the bottom of my heart for always being there for me.

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## CHAPTER 1

### INTRODUCTION

#### 1.1. Biographical Sketch

Mátyás Seiber (1905-1960) was a British composer and teacher.<sup>1</sup> From 1919 to 1924 Seiber studied cello with Adolf Schiffer and composition with Kodály at the Budapest Academy of Music. After completing his studies, he moved to Germany in the late 1920s, accepting a teaching post at the Hoch Conservatory in Frankfurt in 1928. It was at Frankfurt that Seiber set up a class in the theory and practice of jazz which was the first of its kind in Europe. During his Frankfurt years he played the cello in the Lenzewski Quartet and conducted at the theatres of the city.

Dismissed from his teaching post in 1933 after Hitler took power, Seiber returned to Budapest and briefly visited Russia before emigrating to England in 1935, where he would spend the rest of his life. In 1942 Seiber was invited by Michael Tippett to teach at Morley College, where he taught music appreciation, composition and harmony for 15 years. He was widely admired and respected as a teacher of composition in England, and his former students include

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<sup>1</sup> This biographical sketch is based on the following sources: Erik Levi, "Mátyás Seiber (1905-60)," *Continental Britons. The Émigré Composers* Notes with Nimbus Records N1 5730/1, 2004; Hugh Wood, "Seiber, Mátyás (György)," *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie (London: MacMillan, 1980) vol. 17, 110.

Don Banks, Peter Racine Fricker, Anthony Gilbert, Peter Schat, Ingvar Lidholm, and Hugh Wood.

In 1943, Seiber helped Francis Chagrin to found the Committee—later known as Society—for the Promotion of New Music. In 1945 he himself founded the Dorian Singers and gave performances of choral music ranging from sixteenth century works to modern music. In 1960 Seiber was invited to lecture at South African universities and during that visit died in a car accident in the Kruger National Park.

## 1.2. Seiber's Music

Seiber's music ranges from pop music, such as the song *By the Fountains of Rome* (1956), to film music such as the animated classic *Animal Farm* (1955). He wrote folk music settings, chamber music, orchestral music, and choral music. His longstanding interest in jazz resulted in compositions such as the two *Jazzolettes* (1929-33) and the collaboration with John Dankworth on the 1959 *Improvisations*. Finally, he composed serial music in a style that was uniquely his own.

Though Seiber composed a wide range of music during the course of his life, the twelve-tone works are his most serious and ambitious. It is in his chamber music, and particularly in the works for violin and piano, that he developed his own compositional style through: a) partitioning the series-class into groups which are identifiable by shared tetrachordal content, and which I will hereinafter call families; and b) permutation technique. The purpose of this dissertation is to examine Seiber's serial technique and trace how it develops over time.

Seiber's early serial music is clearly influenced by the music of Bartók and Schoenberg. The outcome of his first attempt at serial music is one of his settings (1927-9) of nonsense poems by Christian Morgenstern. Though this work is serial in that it is based on a seven-note series, his first twelve-tone composition was one of the abstract *Jazzolettes* (1933) for two saxophones, trumpet, trombone, piano, and drums. Seiber's first fully mature serial composition was the String Quartet No. 2 (1934-5), to be analyzed in Chapter 2.

In his last six years, Seiber produced a series of works which show his newly developed permutation technique. The first of these was the *Concert Piece for Violin and Piano* (1954), to be analyzed in Chapter 3. Unlike conventional twelve-tone pieces where the order of pitch classes from the twelve-tone series is kept and developed in inversion, retrograde or retrograde-inversion, his works employ a unique way of arranging the pitch-classes of the twelve-tone series, and results in his permutation technique. Seiber specially favored symmetrical set-classes when he employed this technique; among these pieces are the *Concert Piece for Violin and Piano*, the *Permutazione a cinque* (1958), and the *Sonata for Violin and Piano* (1960).

Seiber's twelve-tone pieces are characterized by contrasting moods that sometimes follow one another quickly. These contrasting moods are created by a number of tempo, dynamic and texture changes. Seiber's numerous tempo changes occur within one movement or even within a section. They range from *Allegro* to *Lento* and are all indicated with specific metronome markings. The dynamics also change very quickly, often within only a few measures, and can range from *pp* to *ff*. Often he juxtaposes thick textures against delicate, almost pointillistic, textures in his serial compositions. The constant changes of tempo, dynamics, and texture, and the colorful changes in register create many contrasting moods that make his music especially interesting.

Regarding the melodic aspect of his twelve-tone pieces, Seiber often uses melodic ideas of such individual shape that they are easily recognizable in later transformation. Even though he avoids the exact repetition of a theme or motive and the pitch-class organization is different when the melody returns, they are recognizable by their unique rhythm or melodic contour.

This dissertation will explore Seiber's use of twelve-tone technique through close analytic readings of three works: *String Quartet No. 2* (1934-5), *Concert Piece for Violin and Piano* (1953-54), and the *Sonata for Violin and Piano* (1960).

In most of the articles listed in the bibliography, including those by Francis Routh, Michael Graubart, Hans Keller, John S. Weissmann, Peter Racine Fricker, Colin Mason, and Hugh Wood, there are only brief discussions of the three pieces I analyze in this dissertation. While these discussions do comment about Seiber's compositional style, the overall mood of his music and the influences of Kodály, Bartók and Schoenberg upon him, they do not really engage in serious analysis. Colin Mason does mention Seiber's tendency to work with a smaller set of notes than the full twelve and the fact that *Concert Piece* is restricted to a limited number of transpositions, and Hans Keller does note the segmentation of the series and the free permutation within segments in *String Quartet No. 2*, but neither goes into detail about his compositional technique or provides detailed music examples. What's more, none of these articles refers to the series-classes of families which I explain in my analysis or does more than touch upon form and overall structure, both of which I analyze in detail.

The sole article of use is Seiber's own 1952 article, "Composing with Twelve Notes," in which he delves into the technical aspects of twelve-tone composition, citing music examples from Schoenberg's Third and Fourth String Quartets, Berg's Violin Concerto, Luigi

Dallapiccola's opera *Il Prigioniero* and song "La primavera ha venido," Webern's 3 Songs Op. 23, and his own *Ulysses*. Seiber notes in this article that the technique of "composing with twelve notes" is neither a system nor a theory, but a practice and method of working. Furthermore, Seiber sees the twelve-tone method as an extension of tonality rather than its antithesis.

For the remainder of this introduction, I will consider two central issues to be explored more fully in the individual chapters that follow: the subdivisions of the series into set-classes; and the partition of the series-class into families.

### **1.3. Subdivisions of the Series into Set-Classes**

In each of the twelve-tone works I have chosen to analyze, Seiber introduces the prime series in the opening measures of the work. Rather than applying conventional techniques such as inversion, retrograde, retrograde-inversion, etc. to develop the prime series, Seiber subdivides the prime series into set-classes that can all be mapped onto the twelve-tone series. In the String Quartet and the *Sonata for Violin and Piano* (Chapters 2 and 4, respectively), Seiber works with these set-classes rather than the whole twelve-tone series, using them to represent certain patterns that appear either as melodic lines or harmonic chords. In *Concert Piece for Violin and Piano* (Chapter 3), however, he expands this technique further by performing an unending series of permutations on the set-classes. By permutation, I mean that the ordered positions within set-classes are reordered so that different combinations of ordered positions within the set-classes appear throughout. While permutation is used selectively in the String Quartet and the *Sonata for Violin and Piano*, in *Concert Piece for Violin and Piano*, it is a feature of the whole work. By

working with these smaller set-classes, Seiber transcends the bounds of series-class and creates a more flexible language.

The String Quartet No. 2 (1934-5), examined in Chapter 2, presents a symmetrical twelve-tone series based on three tetrachords; (0123), (0167) and (0123). The two hexachords that divide the series are symmetrical in retrograde at  $T_6R$ . Seiber subdivides the series into hexachords, tetrachords, and trichords, each of which plays an important role in the melodic structure of the piece. These smaller set-classes are used for themes or motives that can be identified by their pitch-class content. That is, instead of working with the complete twelve-tone series for a theme or a particular motive, Seiber subdivides the series into smaller sets and uses them as thematic material. There are also many passages in the first movement of this composition where only one tetrachord of the series is presented.

The *Concert Piece for Violin and Piano* (1953-4), examined in Chapter 3, is based on twelve non-repeated notes, all of which may be mapped onto the twelve-tone series. The (0167) tetrachord is the most important set-class in this composition; the basic pitch organization of the twelve-tone series is three forms of (0167). These tetrachords are derived from the prime series and are structurally significant since the entire composition is based on the permutation of these discrete tetrachords. The permutation of the tetrachords takes place on two levels: among the tetrachords and within the tetrachords themselves. The components of each tetrachord—as well as the order of the three tetrachords that subdivide the twelve-tone series—are all freely switched.

The *Sonata for Violin and Piano* (1960), examined in Chapter 4, is strictly serial<sup>2</sup> and every note can be mapped onto the twelve-tone series. The twelve-tone series is based on three forms of (0123). Whereas the pitch-classes of the violin mostly follow the ordered positions of the series, the arrangement of the pitch-classes of the piano shows patterns that are created from combining certain pitch-classes of the prime series. These newly created patterns, of which the set classes are primarily but not exclusively (0147) and (0134), are used consistently throughout the first movement, though mainly in the piano. The ordered positions of the pitch-classes within these tetrachords also vary. Though this movement is based on a twelve-tone series, the components are not organized by the regular order of the series, nor is it based on the permutation of the initial tetrachords of the prime series as in *Concert Piece*. Rather, Seiber creates new patterns from the existing twelve-tone matrix. This is another way in which Seiber's compositional method offers him more options than conventional twelve-tone technique.

#### **1.4. Partition of the Series-Class into Groups**

The prime series of all three compositions is based on three symmetrical tetrachords. The 48 members of the series-classes that result may be divided into a varying number of families. Example 1.1 below illustrates the six families of String Quartet No. 2 that result from the division of the series-class into families (see Chapter 2, pp. 25-29 for details).

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<sup>2</sup> With the exception of two chords in the piano, mm. 3-4 in the first movement and five short passages in the last movement.

**Example 1.1 The Six Families of String Quartet No. 2**

<b>Family I</b>	<b>P<sub>0</sub></b> [C D Eb Db] [E B F Bb] [G A Ab Gb] <b>P<sub>6</sub></b> [F# G# A G] [Bb F B E] [Db Eb D C] <b>I<sub>3</sub></b> [Eb Db C D] [B E Bb F] [Ab Gb G A] <b>I<sub>9</sub></b> [A G F# G#] [F Bb E B] [D C C# D#]
<b>Family II</b>	<b>P<sub>1</sub></b> [C# D# E D] [F C F# B] [Ab Bb A G] <b>P<sub>7</sub></b> [G A Bb Ab] [B Gb C F] [D E Eb Db] <b>I<sub>4</sub></b> [E D C# D#] [C F B F#] [A G Ab Bb] <b>I<sub>10</sub></b> [Bb Ab G A] [Gb B F C] [Eb Db D E]
<b>Family III</b>	<b>P<sub>2</sub></b> [D E F Eb] [F# C# G C] [A B Bb Ab] <b>P<sub>8</sub></b> [Ab Bb B A] [C G C# F#] [Eb F E D] <b>I<sub>5</sub></b> [F Eb D E] [C# F# C G] [Bb G# A B] <b>I<sub>11</sub></b> [B A Ab Bb] [G C Gb C#] [E D Eb F]
<b>Family IV</b>	<b>P<sub>3</sub></b> [Eb F F# E] [G D Ab Db] [Bb C B A] <b>P<sub>9</sub></b> [A B C Bb] [C# G# D G] [E F# F Eb] <b>I<sub>6</sub></b> [F# E Eb F] [D G Db Ab] [B A Bb C] <b>I<sub>0</sub></b> [C Bb A B] [G# C# G D] [F Eb E F#]
<b>Family V</b>	<b>P<sub>4</sub></b> [E F# G F] [G# Eb A D] [B Db C A#] <b>P<sub>10</sub></b> [Bb C C# B] [D A Eb Ab] [F G F# E] <b>I<sub>7</sub></b> [G F E F#] [Eb Ab D A] [C Bb B C#] <b>I<sub>1</sub></b> [C# B Bb C] [A D Ab Eb] [F# E F G]
<b>Family VI</b>	<b>P<sub>5</sub></b> [F G G# F#] [A E Bb Eb] [C D C# B] <b>P<sub>11</sub></b> [B C# D C] [Eb Bb E A] [F# Ab G F] <b>I<sub>8</sub></b> [Ab Gb F G] [E A Eb Bb] [C# B C D] <b>I<sub>2</sub></b> [D C B C#] [Bb Eb A E] [G F F# G#]

These families are identified by their shared tetrachordal content. The unordered pitch-class collection of the three tetrachords is identical in each family. The partitioning of the series-class into these families results from the all-combinatorial<sup>3</sup> source tetrachords of the series in each composition. Although different series-forms are involved, the content of the tetrachords remains the same; i.e., while the pitch classes of the series in each family are the same, their order is different. It is essential to understand that within Seiber's choice of series-forms there was an understanding that it would be divisible into families. All of the works analyzed here feature, to a greater-or-lesser extent, this compositional technique.

In the String Quartet No. 2, the partitioning of the series-class results in six families that share the same tetrachordal content. Seiber, however, does not explore their use as "harmonic" areas, preferring instead to divide the series into pitch-class sets and derive his motives from them. In *Concert Piece for Violin and Piano*, and in *Sonata for Violin and Piano*, the families function as harmonic areas in the conventional sense. In the *Concert Piece*, Seiber's use of families in this way is simple and straightforward. In the *Sonata*, however, his harmonic

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<sup>3</sup> "The *aggregate*—a collection of all twelve pitch classes—is the basic harmonic unit in twelve-tone music... . *Combinatoriality* is the general term for combining a collection with one or more transposed or inverted forms of itself (or its complement) to create an aggregate." Collections that are capable of being combined in this way are called *combinatorial* collections. "There are four kinds of combinatoriality: *prime-*, *inversional-*, *retrograde-*, and *retrograde-inversional-combinatoriality*." Joseph N. Straus, *Introduction to Post-Tonal Theory*, 3rd ed. (Upper Saddle River, New Jersey: Pearson Prentice Hall, 2005), p. 222. What Babbitt has called an "all-combinatorial" set permits P/RI as well as P/I combinatoriality. See "Some Aspects of Twelve-Tone Composition" (1955), "Twelve-Tone Invariants as Compositional Determinants" (1960), and "Set Structure as a Compositional Determinant" (1961), all reprinted in *The Collected Essays of Milton Babbitt*. Some of this material is presented more informally in *Milton Babbitt: Words About Music*, ed. Stephen Dembski and Joseph N. Straus (Madison: University of Wisconsin Press, 1987).

language becomes more complex, as he creates “harmonic” areas in which there is a tonic family and a sense of modulation to related families.

The generation of the series from three forms of (0167) is the principal organizational feature of the prime series in *Concert Piece*. The nature of the (0167) tetrachord results in the partitioning of the series-class into two families, or “harmonic” areas, in which Seiber remains throughout the composition. He does not alternate between harmonic areas; rather, he uses one family for a long section, shifts to the second and then ends with a brief reprise of the first family. Neither does he use the two harmonic areas simultaneously, as he will in *Sonata*. The harmonic language of *Concert Piece* is also more narrowly constrained than in *Sonata*. Though divided structurally into nine sections, its harmonic language does not change as it moves through the sections. The work maintains the listener’s interest by contrasting tempi, articulation, and registration from section to section.

The *Sonata for Violin and Piano* is based on three all-combinatorial (0123) source tetrachords that partition the series-class into four families. Of the three works analyzed here, it is the most complex in terms of its harmonic language.

In all of the compositions discussed in this dissertation, Seiber uses the twelve-tone components of the prime series, but the technique he applies to them is unconventional. As his compositions become more strictly serial, he develops this unconventional technique in such a

way as to be able to derive ideas from the series that are not possible with conventional twelve-tone technique. The end result is a collection of highly interesting compositions in which, above all, Seiber's unique voice is heard.

## CHAPTER 2

### STRING QUARTET NO. 2 (1934-35)

#### INTRODUCTION

Each of the three string quartets Seiber composed over a span of 27 years was written in a different style. String Quartet No. 1 was written in 1924 while Seiber was studying with Kodály in Budapest; it is lyrical and very Hungarian in character.<sup>4</sup> String Quartet No. 2 was written in 1934-35, just before Seiber emigrated to England. While not every note of this quartet is mappable onto the twelve-tone series, it is very much a serial composition. String Quartet No. 3, written in 1948-51, uses twelve-tone technique very freely. Of the three quartets, the third, or *Quartetto Lirico*, is probably the best known. In this Chapter, I will examine the second of these quartets.

During the initial phases of analysis, I became convinced that the series suggested by Weissmann in the introduction to the printed score is problematic: I am unable to find it in complete order anywhere in the first movement.<sup>5</sup> I was likewise unable to detect a match between pitch-class patterns of the themes as I see them and those of Weissmann's series. My

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<sup>4</sup> Michael Graubart, "Mátyás Seiber 1905-1960," *Composer* 86 (Winter 1985), 2.

<sup>5</sup> Mátyás Seiber, "String Quartet No. 2," ed. John Weissmann, (Milan: S. A. Edizioni Suvini Zerboni, 1954).

analysis of the quartet has led me to conclude that the first movement is in sonata-allegro form; the second movement (marked *Alla Blues*), in ABA' form; and the last, in a rondo-like form with slow episodes. In what follows, I focus primarily on the first movement.

The complete series as I have analyzed it is not presented in order horizontally until the middle of the first movement; this is unusual for twelve-tone music. Even more unusual is the fact that Seiber presents the series horizontally only once. The complete series, however, appears more frequently in horizontal order in the second movement.

The tetrachords upon which the prime series is based are (0123), (0167), and (0123). These three tetrachords permit the 48 members of the series-class to be partitioned into six distinct groups sharing the same tetrachordal content. Even though different series-forms are involved, the content remains the same because of the all-combinatorial nature of the (0123) and (0167) tetrachords.

The concept of family, used for the first time in the second quartet, will be invoked throughout the remaining chapters. Still a nascent concept for Seiber in the mid-1930s, his use of family in this quartet is overshadowed by his concern with the subdivision of the prime series into pitch-class sets. In his subsequent twelve-tone compositions—especially *Concert Piece for Violin and Piano* (1953-54) and *Sonata for Violin and Piano* (1960)—he will continue to refine this technique.

The beginnings of Seiber's permutation technique, i.e., his interest in re-ordering the pitch-classes within a pitch-class set, start to be visible in the third movement. Like the concept of family, Seiber would refine his technique of permutation in his later twelve-tone compositions, especially *Concert Piece for Violin and Piano*.

Some commentators have found a strong Bartókian influence in the first movement of Seiber's Second Quartet, and in particular, Colin Mason notes that Seiber's first movement could almost be regarded as a free paraphrase of parts of Bartók's Fourth Quartet.<sup>6</sup> While this may be so, my intention is to focus on those aspects of Seiber's compositional technique that are unique to him, and the ways he used them, rather than upon the sources that influenced him.

## ANALYSIS

In what follows, I analyze the opening movement of this quartet in detail, first by demonstrating the arrangement of the pitch-classes among the following three elements: a) the twelve-tone components; b) the subdivision of the twelve-tone series into tetrachords, hexachords and trichords; and c) the six families.

I then analyze the movement for form, which, based on the two themes presented at the beginning and their motivic development thereafter, I demonstrate is sonata-allegro form. I further illustrate that these themes are based on the subdivision of the series into tetrachords and hexachords. In addition to the two primary themes, I identify an independent motive that is used extensively throughout the opening movement. As the music progresses, the second theme and the independent motive are developed in combination with each other in such a way that elements of each are combined with the others.

I conclude the chapter with concise analyses of the second and third movements.

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<sup>6</sup> Hugh Wood, "The Music of Mátyás Seiber," *The Musical Times* 111/1531 (September 1970), 888.  
Colin Mason, "The Musical Personality of Mátyás Seiber," *The Listener* (31 January 1957), 205.

## THE ARRANGEMENT OF THE PITCH-CLASSES

### 2.1. The Twelve-Tone Series

The prime series, stated in mm. 1-2 of the first movement, is not presented horizontally in one instrument. Instead, the first four ordered positions are spread among the quartet, beginning with the cello and followed by viola, violin II, and violin I. In measure 2, a pair of sixteenth-notes in each instrument introduces the remaining eight ordered positions (see Example 2.1a below). In order to see these twelve notes in their ordered positions, I have transcribed them on a single staff without rhythmic values (see Example 2.1b below).

#### Example 2.1 The Twelve Notes of Series $P_0$

##### a. Presentation of the Series $P_0$ in mm. 1-2 of the Score

Allegro marcato ( $\downarrow = \text{circa } 112$ )

$P_0$

I. VIOLINO

II. VIOLINA

VIOLA

**b. Transcription of the Series in Ordered Position without Rhythmic Values**



In the introduction to the printed edition of *String Quartet No. 2*, Weissmann presents a twelve-tone series (see Example 2.2a below) in which ordered positions 6, 8-12 differ from what I have transcribed above. As I analyze the first two measures, once the first four ordered positions are played, the remaining notes are stated in quick succession as a pair of vertical sonorities. Because ordered positions 5, 6, 9, 11 and 7, 8, 10, 12 are presented vertically, it is difficult to determine the prime series. The series I believe best reflects Seiber's intent is stated in violin I, mm. 55-57 (see Example 2.2b below). While this is the first—and only—complete melodic statement of this series in the first movement, I note that Weissmann's series is never fully stated melodically; the closest approximation occurs in mm. 28-30 when ordered positions 1-8 are stated (see Example 2.2c below).

**Example 2.2 Two Possible Twelve-Tone Series**

**a. Weissmann's and Lee's Series Compared**

**b. Lee's Series as Stated in Violin I, mm. 55-57**

*cresc.* . . . . .

**c. Weissmann's Series as Stated in Violin I, mm. 28-30**

There are a number of reasons why I believe the series as I have ordered it is preferable to that of Weissmann: a) Weissmann's series is never fully stated in the first movement, whereas my series does appear in full order; b) my series appears at least eighteen times in the second movement; c) there are passages in the second movement where my complete series is stated melodically, either in prime form, or in inversion in all four instruments; d) when my series is superimposed over the first movement, certain six-note melodic patterns—which correspond to the first six ordered positions of my series—stand out; and e) there are places in the first movement where Seiber divides the two hexachords into sets of trichords which in my series appear melodically as ordered positions 1-3, 4-6, 7-9, and 10-12. I am therefore going to base this analysis on the series as I have ordered it.

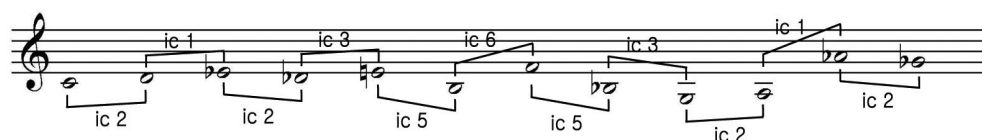
Once my series is adopted, the two hexachords that result are related at  $T_6R$ , and are thus symmetrical in retrograde. The first and last notes [C-F#] are related at  $T_6$ , as are the second and

second-to-last notes [D-Ab], etc. Furthermore, not only is there symmetry between the two hexachords at  $T_6$ , the transpositions of the series-forms usually also take place at  $T_6$ .

Example 2.3a below illustrates the interval classes of the prime series. Though interval class 2 occurs twice as often as any of the others, interval classes 1, 3, and 5 are equally important; together these four interval classes form the (013) and (025) trichords. These trichords are significant because the melodic contour of the movement is often based upon them (see Example 2.3b below).

### Example 2.3 Interval Classes

#### a. Interval Classes in the Prime Series



#### b. Interval Classes (1, 2, 3, 5) in the Melodic Contour of Violin I, mm. 8-10

A musical staff in treble clef showing a melodic contour. The notes are G4, A4, Bb4, C5, D5, Eb5, F5, G5, A5, Bb5, C6. Brackets above the staff indicate interval classes: G-A (ic 2), A-Bb (ic 1), Bb-C (ic 2), C-D (ic 3), D-Eb (ic 5), Eb-F (ic 5), F-G (ic 5), G-A (ic 5), A-Bb (ic 3), Bb-C (ic 3). Brackets below the staff indicate trichords: [013] for G-A-Bb and [025] for C-D-Eb. Performance markings include *p espress.* and *mf*.

Table 2.1 below intabulates the interval classes (hereafter, ic) of the prime series by frequency as shown in Example 2.3a above:

**Table 2.1 Interval Class and Frequency**

<b>ic</b>	<b>Frequency</b>
1	2
2	4
3	2
5	2
6	1

The set classes which are based on the interval classes of the prime series—i.e., the (012345) hexachords or subdivisions of these hexachords into the (013) and (025) trichords—are Seiber's basic building blocks for melodic contour, as I will demonstrate below.

## **2.2. Subdivision of the Twelve-Tone Series**

Subdivision of the series into tetrachords, hexachords, and trichords plays an important role in the melodic structure of the first movement. Particular pitch-class sets, which are associated with certain motives, are identifiable by their set-class. Thus, rather than working with the complete twelve-tone series, Seiber divides it into pitch-class sets that are used melodically throughout.

## The Tetrachords

### Example 2.4 The Three Tetrachords of the Prime Series

Example 2.4a below illustrates the prime series, which I have transcribed on a single staff without rhythmic values, and identified as tetrachords X, Y, and Z.

#### a. Tetrachords X, Y, and Z

The musical notation shows a single staff with a treble clef and a common time signature. The notes are grouped into three tetrachords:

- Tetrachord X:** [C, D, Eb, Db] (0123) - Notes: C4, D4, Eb4, Db4
- Tetrachord Y:** [E, B, F, Bb] (0167) - Notes: E4, B4, F5, Bb5
- Tetrachord Z:** [G, A, Ab, Gb] (0123) - Notes: G4, A4, Ab4, Gb4

Example 2.4b below illustrates the derivation of the three tetrachords from the prime series as it appears in the score. Tetrachord X is all the notes of measure 1 in sequence. Tetrachords Y and Z are formed from the notes of measure 2 in the following manner: Y is the sixteenth-notes of violin II plus the sixteenth-notes of the cello; Z is the sixteenth-notes of the viola plus the sixteenth-notes of violin I.

**b. Tetrachords X, Y, and Z in mm. 1-2 of the Score**

**Allegro marcato** ( $\text{♩} = \text{circa } 112$ )

The musical score shows four staves: I. VIOLINO, II. VIOLINO, VIOLA, and VIOLONCELLO. The first measure contains notes 1, 2, 3, and 4. The second measure contains notes 11, 12, 5, and 7. The tetrachord  $P_0$  is indicated in the first measure. The tetrachord  $[0123]$  is indicated in the first measure, and  $[0123]$  and  $[0167]$  are indicated in the second measure. The cello part has a dynamic marking  $f$  and the tetrachord  $[0123]$  below it.

In many places within the first movement, Seiber does not state all twelve notes of a complete series-form. Instead, he selects a single tetrachord, which he uses melodically in each instrument, often repeating the tetrachord two or three times. Elsewhere, he selects tetrachords from different series-forms and states them one after the other.

### The Hexachords

The prime series is divisible into two (012345) hexachords, related by  $T_6R$ , that are symmetrical. The second hexachord is the retrograde of the first hexachord by  $ic\ 6$  (see Example 2.5 below). These hexachords are used in the formation of a canonic melody in mm. 7-10, following the three statements of  $P_0$ ,  $I_9$ , and  $I_3$  in mm. 1-6 (see Example 2.10 on p. 30).

### Example 2.5 The Two Symmetrical (012345) Hexachords of the Prime Series

[C, D, Eb, Db, E, B]  
 (012345)

[F, Bb, G, A, Ab, Gb]  
 (012345)

+2 +1 -2 +3 -5 +5 -3 +2 -1 -2

T<sub>6</sub>  
 T<sub>6</sub>  
 T<sub>6</sub>  
 T<sub>6</sub>  
 T<sub>6</sub>  
 T<sub>6</sub>

Example 2.6 below shows how the canonic melody in each instrument is comprised of the first hexachords of either  $P_0$  or  $P_6$ . The canon begins in the cello and is followed by the viola at  $T_6$  after a quarter rest. The first part of this canon is a phrase of seven notes (repeated once); the second part of the canon is a melody in sixteenth-notes ending in m. 10. One measure after the viola entrance, violin I enters with a melody that differs slightly from the two lower instruments; violin II follows after a quarter rest with a melody similar to violin I.

**Example 2.6 The First Hexachords of  $P_0$  and  $P_6$  in Canon, mm. 7-10\***

\*The unordered collection of ordered positions 1-6 of  $P_6$  and the unordered collection of ordered positions 7-12 of  $P_0$  are identical

The division of the series into hexachords leads to further subdivision of the series into trichords. Seiber divides the (012345) hexachord into the (013) and (025) trichords, and uses them throughout the first movement, where they play an important role in the melodic contour of the music.

## The Trichords

Example 2.7a below illustrates the four trichords of the prime series, transcribed on a single staff without rhythmic values, and labeled with ordered positions and set-class.

### Example 2.7 The Four Trichords of the Prime Series

#### a. The Two (013) and (025) Trichords of the Prime Series

The musical notation shows a single staff with a treble clef and a common time signature. The notes are arranged in a sequence of 12 positions, labeled 1 through 12. The notes are: 1 (C), 2 (D), 3 (E), 4 (F), 5 (G), 6 (A), 7 (B), 8 (C), 9 (D), 10 (E), 11 (F), 12 (G). Brackets below the staff group the notes into four trichords: [013] (positions 1-3), [025] (positions 4-6), [025] (positions 7-9), and [013] (positions 10-12).

Example 2.7b below shows these trichords as they appear for the first time in measure 13 of the score. All four instruments have three eighth notes that are to be played staccato and down-bowed. Violin I and viola employ set classes (013), related by their retrograde, while the violin II and cello employ set classes (025), also related by their retrograde. The four trichords together instead form the twelve tone series  $P_3$ .

b. The (013) and (025) Trichords in Score, m. 13<sup>7</sup>

The image shows a musical score for measures 13 and 14. It consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The score is marked "molto misurato" and "P3". The first two staves show the trichord [013] (notes 1, 2, 3) and the trichord [025] (notes 6, 5, 4). The last two staves show the trichord [013] (notes 10, 11, 12) and the trichord [025] (notes 9, 8, 7). Brackets labeled "R" indicate retrograde relationships between the first two staves and the last two staves.

These trichords return many times in the first movement, though not always with the same articulation: sometimes they are marked *pizzicato*; at other times, *legato*. Seiber also varies their note values.

### 2.3. The Families

The total number of combinations in the complete series-class is 12 prime, 12 inversional, 12 retrograde, and 12 retrograde-inversional, for a total of 48 series. Example 2.8 below expresses this in a 12 x 12 matrix:

<sup>7</sup> The break between staves indicates the excerpt is taken from the middle of the bar.

**Example 2.8 The 48 Members of the Series-Class** $P_0 \Rightarrow$ 

0	2	3	1	4	11	5	10	7	9	8	6
10	0	1	11	2	9	3	8	5	7	6	4
9	11	0	10	1	8	2	7	4	6	5	3
11	1	2	0	3	10	4	9	6	8	7	5
8	10	11	9	0	7	1	6	3	5	4	2
1	3	4	2	5	0	6	11	8	10	9	7
7	9	10	8	11	6	0	5	2	4	3	1
2	4	5	3	6	1	7	0	9	11	10	8
5	7	8	6	9	4	10	3	0	2	1	11
3	5	6	4	7	2	8	1	10	0	11	9
4	6	7	5	8	3	9	2	11	1	0	10
6	8	9	7	10	5	11	4	1	3	2	0

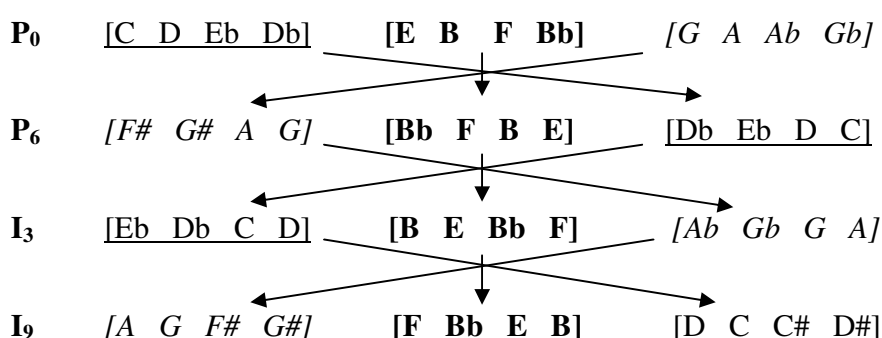
Because of the all-combinatorial nature of the source tetrachords (0123) and (0167), these 48 members may be partitioned into six groups, as shown in Table 2.2 below:

**Table 2.2 The Series-Class Divided into Six Groups**

<b>Family I</b>	<b>P<sub>0</sub></b> [C D Eb Db] [E B F Bb] [G A Ab Gb] <b>P<sub>6</sub></b> [F# G# A G] [Bb F B E] [Db Eb D C] <b>I<sub>3</sub></b> [Eb Db C D] [B E Bb F] [Ab Gb G A] <b>I<sub>9</sub></b> [A G F# G#] [F Bb E B] [D C C# D#]
<b>Family II</b>	<b>P<sub>1</sub></b> [C# D# E D] [F C F# B] [Ab Bb A G] <b>P<sub>7</sub></b> [G A Bb Ab] [B Gb C F] [D E Eb Db] <b>I<sub>4</sub></b> [E D C# D#] [C F B F#] [A G Ab Bb] <b>I<sub>10</sub></b> [Bb Ab G A] [Gb B F C] [Eb Db D E]
<b>Family III</b>	<b>P<sub>2</sub></b> [D E F Eb] [F# C# G C] [A B Bb Ab] <b>P<sub>8</sub></b> [Ab Bb B A] [C G C# F#] [Eb F E D] <b>I<sub>5</sub></b> [F Eb D E] [C# F# C G] [Bb G# A B] <b>I<sub>11</sub></b> [B A Ab Bb] [G C Gb C#] [E D Eb F]
<b>Family IV</b>	<b>P<sub>3</sub></b> [Eb F F# E] [G D Ab Db] [Bb C B A] <b>P<sub>9</sub></b> [A B C Bb] [C# G# D G] [E F# F Eb] <b>I<sub>6</sub></b> [F# E Eb F] [D G Db Ab] [B A Bb C] <b>I<sub>0</sub></b> [C Bb A B] [G# C# G D] [F Eb E F#]
<b>Family V</b>	<b>P<sub>4</sub></b> [E F# G F] [G# Eb A D] [B Db C A#] <b>P<sub>10</sub></b> [Bb C C# B] [D A Eb Ab] [F G F# E] <b>I<sub>7</sub></b> [G F E F#] [Eb Ab D A] [C Bb B C#] <b>I<sub>1</sub></b> [C# B Bb C] [A D Ab Eb] [F# E F G]
<b>Family VI</b>	<b>P<sub>5</sub></b> [F G G# F#] [A E Bb Eb] [C D C# B] <b>P<sub>11</sub></b> [B C# D C] [Eb Bb E A] [F# Ab G F] <b>I<sub>8</sub></b> [Ab Gb F G] [E A Eb Bb] [C# B C D] <b>I<sub>2</sub></b> [D C B C#] [Bb Eb A E] [G F F# G#]

The six groups listed in Table 2.2 above are distinguished by their shared tetrachordal content. Each family comprises eight members: four distinct series-forms and their four retrogrades. Example 2.9 below illustrates the shared content of the first group—or what I will hereafter call “family”: series P<sub>0</sub>, P<sub>6</sub>, I<sub>3</sub>, I<sub>9</sub>.

**Example 2.9 The Series P<sub>0</sub>, P<sub>6</sub>, I<sub>3</sub>, I<sub>9</sub> of Family I\***



\*The arrows show the identical contents of the unordered collection of the pitch-classes of each tetrachord

Examination of the pitch-classes of these four series shows that while their ordered positions vary depending on series-form, the pitch-class contents of the discrete tetrachords themselves remain the same. Because P<sub>0</sub>, P<sub>6</sub>, I<sub>3</sub>, and I<sub>9</sub> are related in this way, I call them a “family.” In the context of Table 2.2, they are family I; families 2-6 of Table 2.2 are all similarly related.<sup>8</sup>

<sup>8</sup> “Combinatoriality also influences the large-scale organization of twelve-tone pieces. It does so by taking the forty-eight series-forms and dividing them into twelve or few closely knit groups of series-forms. Each of these groups constitutes an *area* that functions like the tonicized keys in a tonal piece... . Combinatoriality provides a solution to this problem because it groups together families of series-forms based not on their total content (which is always the same) but on the content of their hexachords... . Each area contains series-forms all with the same hexachordal content.” Joseph N. Straus, *Introduction to Post-Tonal Theory*, 3rd ed. (Upper Saddle River, New Jersey: Pearson Prentice Hall, 2005), p. 227-29. The idea of twelve-tone areas is developed in studies by David Lewin; see his “Inversional Balance as an Organizing Force in Schoenberg’s Music and Thought,” *Perspectives of New Music* 6/2 (1968), pp. 1-21; “*Moses and Aron*: Some General Remarks, and Analytic Notes for Act I, Scene 1,” *Perspectives of*

The fact that the 48 members of the series-class may be partitioned into six families indicates that Seiber understood these families would result from his choice of prime series and that they would open specific possibilities within the composition.

In the String Quartet No. 2, Seiber focuses his attention on subdividing the series into pitch-class sets and deriving motives from them, and he does not develop the concept of family as fully or as systematically as he might have. In *Concert Piece for Violin and Piano* (see Chapter 3), he explores the possibilities of family more fully, and in *Sonata for Violin and Piano* (Chapter 4) he uses this technique to organize the composition as a whole in a way that is analogous to tonal harmony.

#### **2.4. The Two Themes**

The first movement features two themes that differ in character and pitch-class arrangements. Unlike conventional sonata-allegro form, these two themes occupy the same harmonic area, Seiber's Family I, which functions as the tonic. These themes are either tetrachordally or hexachordally based: in the first, all twelve pitch-classes of the series appear; in the second, only the first six ordered positions of the series present the melody. Contrasting in character and identifiable by their rhythmic and melodic contour, these two themes are developed extensively in the development section and further in the recapitulation. In what follows, I will explain their characteristics and show the arrangement of pitch-classes in each theme.

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*New Music* 6/1 (1967), pp. 1-17; and "A Study of Hexachord Levels in Schoenberg's Violin Fantasy," *Perspectives of New Music* 6/1 (1967), pp. 18-32. My families are conceptually similar to Lewin's twelve-tone areas.

### Example 2.10 Theme I, mm. 1-6

Allegro marcato ( $\text{♩} = \text{cirea } 112$ )

Theme I

The musical score for Theme I, measures 1-6, is presented for four instruments: I. VIOLINO, II. VIOLINO, VIOLA, and VIOLONCELLO. The tempo is Allegro marcato with a quarter note equal to 112 cirea. The score is divided into three measures, each containing a pair of sixteenth notes. The first measure (m. 1) shows the tetrachord P<sub>0</sub> in the cello and viola, and the tetrachord I<sub>9</sub> in the violin II and violin I. The second measure (m. 2) shows the tetrachord I<sub>3</sub> in the cello and viola, and the tetrachord I<sub>9</sub> in the violin II and violin I. The third measure (m. 3) shows the tetrachord I<sub>3</sub> in the cello and viola, and the tetrachord I<sub>9</sub> in the violin II and violin I. The score includes fingerings (1-4) and accents (>) for the notes.

Theme I is a vertical presentation of the twelve ordered positions of P<sub>0</sub>, I<sub>9</sub> and I<sub>3</sub>. While series I<sub>9</sub> and I<sub>3</sub> are slightly varied versions of the first two measures, all three presentations show the pattern of the tetrachords. Beginning in the cello, the theme is passed to the viola, violin II, and violin I in sequence, followed in the next measure by a vertical sonority in which all four instruments simultaneously execute a pair of sixteenth-notes. This theme is comprised of ordered positions 1-4 of the (0123) tetrachord in m. 1, ordered positions 9-12 of the (0123) tetrachord, and ordered positions 5-8 of the (0167) tetrachord; that is, the four sixteenth-notes of violin I and the viola, and violin II and the cello, respectively, in m. 2 (see Example 2.10 above). This pattern is repeated twice in the following four measures in inversion and with the series starting in violin I.

### Example 2.11 The Canonic Theme II, mm. 7-10

The image shows a musical score for 'Theme II' in G major, 3/4 time, spanning measures 7 to 10. The score is divided into two parts: 'First Part' (measures 7-8) and 'Second Part' (measures 9-10). The instrumentation includes Violin I, Violin II, Viola, and Cello/Double Bass. The score features several annotations: 'P<sub>0</sub>' and 'P<sub>6</sub>' boxes indicating pitch transpositions, and 'T<sub>6</sub>' labels indicating transposition. Dynamics include *p espress.*, *mf*, and *pp accompagnando*. Fingerings (1-6) are indicated for many notes. The first part is characterized by a loud, accented melody, while the second part is more melodic and softer.

In the first theme, the instruments enter almost in the manner of an arpeggio; in the second theme, the entrances of the two upper voices are clearly separate from the entrances of the lower voices. The two themes, moreover, are very different in character: the melody of the first is loud, abrupt, and highly accented: the second theme is more melodic, with softer dynamics and longer phrases.

Theme II, mm. 7-10, immediately follows theme I (see Example 2.11 above); there is no bridge between them. This theme, much softer and more expressive in character than the first, is canonic, and is subjected to more extension and variation during the development than the first. The canon begins in the cello, followed by the viola with the melody transposed at T<sub>6</sub>. Violins I and II continue with a slightly varied version of the canon marked *p espressivo*. While all the voices are canonic, the cello and viola are to be played *pp accompagnando*, and the violins thus seem to dominate the fabric of the music.

The canonic theme is hexachordally based and divisible into two parts. The melody of the first part consists of eighth- and quarter-notes lasting until the second beat of the two lower voices in m. 9 and the downbeat of the two upper instruments in the same measure. The two lower voices present two hexachords with ordered positions 1-6 of the series  $P_0$  and  $P_6$ ; the two upper voices present ordered positions 1-3 of the same series.

The melody of the second part consists mainly of sixteenth-notes played *mf* and begins after the caesura with violin I followed by violin II, viola, and cello. The upper two voices continue the previous hexachord with ordered positions 4-6 of the series  $P_0$  and  $P_6$ ; the lower two voices each present ordered positions 1-6 of either  $P_0$  or  $P_6$ . All instruments end the canon together at the end of the second beat in m. 10.

### Example 2.12 The Isorhythmic Structure in mm. 7-8

#### a. Excerpt of the Cello and Viola, mm. 7-8

The musical score shows two staves: the upper staff is for Viola (treble clef) and the lower staff is for Cello (bass clef). Both parts are marked *pp accompagnando*. The music consists of eighth and quarter notes, with a caesura in measure 8.

### b. The Six Pitch-Classes Repeated

### c. The Seven Rhythmic Units Repeated

In the first part of the canon the melody of the cello and the viola are stated isorhythmically (see Example 2.12a above). The phrase repeats these six pitch-classes (see Example 2.12b above), while organizing the rhythm into groups of seven (see Example 2.12c above). Seiber does not use this idea again.

**Example 2.13 Motive r, m. 13**

*molto misurato*  
motive r

The image shows a musical score for four instruments: Violin I, Violin II, Viola, and Cello. The score is for the first three notes of the motive 'r' in measure 13. The notes are marked with 'y' for staccato. The trichords are labeled as [013] and [025]. The positions are numbered 1 through 12. A box labeled P3 is in the top left corner.

In addition to these two themes, there is an important motive which I call motive r. It first appears in m. 13, and thereafter is used throughout the movement. This motive consists of three consecutive eighth-notes played staccato and down-bowed, and marked *forte* and *molto misurato*. This motive is used in its original form (see Example 2.13 above) or combined with theme II, and is based on trichords taken from the original series. Each instrument presents either the (013) or (025) trichord; all four instruments combined form the twelve ordered positions of series  $P_3$ . The (013) in the viola is the retrograde of the (013) in the violin I; the (025) in the cello is the retrograde of the (025) in the violin II.

To summarize, Seiber develops themes I and II extensively in the development and recapitulation sections of this movement. Theme II, moreover, is developed in combination with

motive r. In the recapitulation, each theme reaches its climax with louder dynamics and wider register than in the exposition.

To further understand Seiber's techniques of motivic development, however, we must examine the structure of the movement.

## **FORM**

### **2.5. Structure**

Despite the unusual proportions of the first movement (for instance, the recapitulation is more than twice as long as the exposition; see Table 2.3 below), I make the argument that, based on the two contrasting themes and their motivic development, this movement is written in sonata-allegro form. The two themes are presented in the exposition, as is to be expected; what is unusual is that both theme I and theme II are in family I, which functions as the tonic of this composition. In the recapitulation, theme I inhabits family I while theme II has "modulated" to family V, thus the contrast of harmonic areas occurs not in the exposition but in the recapitulation, which is the opposite of conventional sonata form.

Themes I and II are developed as the music progresses. What is special about Seiber's development of theme II is his incorporation of motive r into it. At the end of the recapitulation, themes I and II, and motive r are presented in sequence for one last time.

**Table 2.3 Sonata-Allegro Form**

Exposition	mm. 1-25 (for 25 measures)
Development	mm. 26-69 (for 44 measures)
Recapitulation	mm. 70-138 (for 68 measures)

**Example 2.14 Development of Themes I and II, mm. 17-25 of the Exposition****a. Theme I, mm. 17-19**

Theme I developed

**b. Theme II, mm. 20-25**

Theme II developed

Themes I and II, and motive r are introduced in mm. 1-13 of the exposition; themes I and II are then extended through mm. 14-25. In Example 2.14a above, the notes of the first

theme have been set in a register that is wider than the original presentation, and each initial long note now begins with a sixteenth-note decoration. In Example 2.14b above, the second theme follows with a slight variation: sixteenth notes combined with dotted rhythms; the canonic feature is maintained. Whereas in the original statement of theme II the lower two voices begin the canon, in mm. 20-25, the upper two voices begin and the melody progresses from the highest to the lowest voice in sequence. These five measures also mark the conclusion of the exposition, and the music slows down, thins out, and gets quieter.

### Example 2.15 Development of Theme II, mm. 26-30 of the Development

Theme II developed

*Allegro giusto* (♩=104)

The musical score for Example 2.15 shows the development of Theme II from measures 26 to 30. It is written for Violin I, Violin II, and Viola. The tempo is marked *Allegro giusto* with a tempo of 104 beats per minute. The music features sixteenth-note patterns and is marked with *mf* and *arco*. A box containing the number 30 is located at the end of the excerpt.

The development begins at the *Allegro giusto*, m. 26, with an increase in tempo and a resurgence of energy. This section is marked by intensive motivic development as well as the distinctive combination of motive r with theme II. Example 2.15 above shows the beginning of the development of the second part of theme II, and is characterized by sixteenth notes. Here the upper two voices begin the canon and the viola joins with a melody that is similar in shape but in

augmented rhythms of eighth- and quarter-notes, mm. 26-30. The development of theme II continues through m. 43.

### Example 2.16 Incorporation of Motive r into Theme II, mm. 46-51 \*

Theme II and motive r combined

The musical score for Example 2.16 shows measures 46 through 51. It is a canon for strings. The cello and viola parts begin in measure 46 with a down-bowed eighth-note motive. The violins enter in measure 50. The score is marked 'allargando' and 'ff'. A circled number '51' is placed above the first measure of the final measure (m. 51).

\*I believe there are three misprints in the score in m. 50: in violin I, the C should be a C# and the A at the end of the measure an Ab; in violin II, the B should be a Bb.

Seiber begins to incorporate motive r into theme II from m. 46 through the *Quasi lo stesso tempo (ma più misurato)* in m. 52 (see Example 2.16 above). In mm. 46-51, the down-bowed motive r is combined with the canonic feature of the second theme. The three eighth-note motive is now extended to four eighth notes in downbow with the addition of ordered position 5, which forms the set-class (01234). The canon begins in the cello, followed by the viola at a distance of a quarter note. The upper two voices, in inversions, enter five beats after the cello. Violin II begins, followed by violin I at a distance of a quarter note. The addition of ordered positions 7-8 in the lower voices further extends the melody until the upper two voices finish the canon. This canon ends on three consecutive down-bowed eighth notes which are

played simultaneously in all four instruments, and are comprised of tetrachords rather than the trichords of the original presentation: ordered positions 1-4 of P<sub>7</sub> in violin I, P<sub>1</sub> in violin II, I<sub>0</sub> in the viola, and I<sub>6</sub> in the cello.

The *Quasi lo stesso tempo (ma più misurato)* in mm. 60-69 builds in tension until the climax. The dynamic markings increase from *mf* to *ff* as the register becomes wider and the sixteenth-note triplets lead us to the climax of the development. The tension is resolved with the restatement of the first theme at the beginning of the recapitulation, m. 70. Here, theme I is presented in P<sub>6</sub> of family I transposed at T<sub>6</sub> from the original statement (cf. Example 2.10, p. 30) and the violin begins the series rather than the cello. Theme II is restated in m. 78, but now it is in family V. The two themes are slightly varied and extended from the two themes in the exposition. Starting with the *Tempo I* at m. 84, the themes are developed through the end of the movement.

**Example 2.17 Conclusion of the First Movement: Themes I-II and Motive r, mm. 130-38**

The image displays two systems of musical notation for the conclusion of the first movement. The first system, starting at measure 130, is marked "Agitato (116-120)" and "ff". It features Theme II in the violin I part, with the other instruments providing accompaniment. The second system, starting at measure 135, is marked "tutta forza" and "ff tutta forza". It features Theme I in the violin I part and motive r in the violin II and viola parts. The score ends with a double bar line at measure 138.

In the closing section of the first movement (mm. 130-38; see Example 2.17 above), themes II, I, and motive r—in that order—are stated a last time. Violin I is the first to enter, followed by violin II and viola in sixteenth notes that identify the canonic second theme through m. 133. Theme I returns in mm. 134-35, and the movement ends with the down-bowed motive r, extended through m. 138.

In summary, the first movement of Seiber's String Quartet No. 2 is comprised of two contrasting themes that are developed extensively in the development section and restated in slightly varied and extended form in the recapitulation. Instead of stating the two themes in different "harmonic" areas in the exposition, as is common in sonata-allegro form, he does so in

the recapitulation, where he continues to develop these themes as well as developing motive r. As a result, the recapitulation is twice as long as the exposition. The musical events of this movement, despite their unusual proportions, correspond to those of sonata-allegro form.

## **THE REMAINING MOVEMENTS**

### **2.6. The Second Movement**

Seiber's first twelve-tone composition was one of two abstract "Jazzolets" composed in the years between 1928 and 1933, and his early interest in jazz is clearly present in the second movement of this quartet, an *Intermezzo* marked *alla 'Blues.'* The movement is in ABA' form with a scherzo as the B section. With the exception of the scherzo and its continuous sixteenth notes, the rest of the movement features dotted jazz rhythms. In an article about Seiber, John Weissmann called this movement an "authentic blues."<sup>9</sup>

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<sup>9</sup> John S. Weissmann, "Mátyás Seiber: Style and Technique," *The Listener* (22 March 1951), 476.

**Example 2.18 The Opening of the Second Movement, mm. 1-3**

Alla "Blues,, (♩ = 88-92)

The musical score shows the opening of the second movement in 4/4 time, marked 'Alla "Blues," (♩ = 88-92)'. It features four staves: Violin I, Violin II, Viola, and Cello. The key signature has two flats. The score is annotated with prime series P<sub>0</sub>, P<sub>6</sub>, and P<sub>2</sub>. P<sub>0</sub> is played by Violin I, Violin II, and Cello. P<sub>6</sub> is played by the Viola. P<sub>2</sub> is played by the Cello. Dynamics include forte (f), piano (p), and piano sostenuto (p sost.). Performance instructions include 'pizzicato' and 'pizzicato leggero'. Fingerings and bowings are indicated with numbers and 'v'.

Seiber continues to use the prime series in the second movement, stating it in complete order more often than in the first. Example 2.18 above shows the opening of the second movement, which begins, like the first, with a presentation of the series P<sub>0</sub> of family I. Unlike the first movement, in which the series was distributed among all four instruments, here the series is presented in the first measure by violins I-II and cello. The viola begins a new series P<sub>6</sub>, in the same measure also belonging to family I.

**Example 2.19 Horizontal Presentation of Ordered Positions 1-12: Violin I, mm. 26-28**

*string. . . . .*

Neither in the first nor the second movement is the complete series presented in horizontal order at the beginning of the movement. It is not until mm. 55-57 of the first movement—roughly the middle—that the series appears horizontally in ordered positions 1-12. In the second movement, the complete series is presented horizontally in the A section for the first time in the violin I, mm. 26-28 (see Example 2.19 above).

**Example 2.20 Canonic Presentation of Series-Forms  $P_1$  and  $I_1$  in Ordered Positions, mm.**

51-54

In the second movement, the instruments present twelve-tone series  $P_1$  and  $I_1$  of families II and V horizontally in canon (see Example 2.20 above). Pairs of instruments present the same series-form from the same family in octaves: violin I and viola present series  $P_1$  of family II; violin II and cello present series  $I_1$  of family V. After stating the complete series, the series-forms are switched: violin I and viola now present  $I_1$  of family V; violin II and cello now present  $P_1$  of family II. Despite the many sixteenth-note rests in each part, the canonic structure is such that the other three voices always have notes to play, and the listener hears an unbroken stream of sixteenth notes throughout.

The second movement shows a much stricter use of the twelve-tone series than the first movement, in which Seiber often, though not always, works with subdivisions of the twelve-tone series of different series-forms without stating the complete series at all times. In the second movement, Seiber states—with the exception of a few measures—the complete series of different series-forms throughout the movement.

## 2.7. The Third Movement

The third movement of the quartet, a fast *Presto* in rondo-like form, is based on a different series. Whereas in the first and second movements, ordered positions 1-4, 5-8, and 9-12 are mostly adjacent, in the third movement, Seiber rearranges the ordered positions of the second and third tetrachords thus: 5, 10, 7, 6, and 8, 9, 12, 11. This new series, a combination of the first (0123) tetrachord of  $P_0$  of the original series and the newly created (0157) and (0124) tetrachords, is used throughout. In order to see this series in ordered position, I have transcribed it on a single staff without rhythmic values (see Example 2.21 below).

### Example 2.21 The Twelve Notes of the New $P_0$



### Example 2.22 The Opening of the Third Movement, mm. 1-4

Example 2.22 above shows the opening four measures of the third movement. The new  $P_0$  is introduced in unorganized order in the first two measures, and the ordered collection of the new series is presented in m. 3 for the first time. The series begins in the cello, followed by the viola, with the last tetrachord of ordered positions 9-12 coming first and being followed by ordered positions 1-8. In the middle of m. 3, violin II begins the series in order, followed by violin I. Again, the last tetrachord of ordered positions 9-12 is presented first.

A unique feature of this movement is the use of permutation upon one of the tetrachords. While Seiber's use of the technique in this quartet is brief, he will extensively develop it in *Concert Piece for Violin and Piano*, and much of Chapter 2 will be concerned with it.

### Example 2.23 Permutation of Ordered Positions 9-12

In the third movement, Seiber takes the series and extends the last four ordered positions 9, 10, 11, and 12 by repeating the notes in mixed orders. In other words, the first eight ordered positions are presented only once while the last four are repeated in different pitch-class combinations. This can be first seen in m. 5, where the first eight ordered positions of the new series are presented in violin I, violin II, and cello, and only the viola repeats the last four ordered positions in permutation (see Example 2.23a below).

#### a. First Occurrence of Permutation in the Viola, mm. 5-6

The musical score for Example 2.23a shows the first occurrence of permutation in the Viola, mm. 5-6. The score is written for four staves: Violin I, Violin II, Viola, and Cello. The Viola part is highlighted with a box and contains a sequence of ordered positions: 9 10 11 12 10 11 9 12 10 12 9 11 10 9 10 12 11 10 9 11 12. The score includes dynamic markings like 'pizz.' and 'sempre pp'.

Seiber develops this further in mm. 48-49, where ordered positions 1-8 are presented as chords and then ordered positions 9-12 are extended four consecutive times in all four instruments (see Example 2.23b below).

b. Permutation in All Instruments, mm. 48-49

P11

col legno (tratto)

1 9 10 11 12 10 11 12 9 11 12 9 10 12 9 10 11 ord.

2

col legno (tratto)

4 10 11 12 9 11 12 9 10 12 9 10 11 9 10 11 12 ord.

3

col legno (tratto)

5 11 12 9 10 12 9 10 11 9 10 11 12 10 11 12 9 ord.

6

col legno (tratto)

7 12 9 10 11 9 10 11 12 10 11 12 9 11 12 9 10 ord.

8

In summary, the third movement is based on a series derived from the first tetrachord of series  $P_0$ , and this series differs from those upon which the first and second movements are based. Rather than focusing upon subdividing the series, as in the first movement, or presenting the complete series in order, as in the second, Seiber chose a new series for the third movement and uses it throughout. He also created melodic extensions by permuting the last tetrachord of the series.

## CONCLUSION

The String Quartet No. 2, the first of Seiber's twelve-tone compositions, already demonstrates his individual approach to composing serial music and foreshadows his later compositions. In all three movements of the String Quartet, we can see Seiber experimenting with the twelve-tone series in ways that are unique to him and that eschew conventional twelve-tone composition. In the first movement, Seiber chooses a prime series of all-combinatorial (0123), (0167), and (0123) tetrachords. These tetrachords form a set-class that may be divided into six families that share the same tetrachordal content, and which then serve as the basis for contrasting "harmonic" ideas. In the third movement, Seiber presents both a new series and another new compositional technique. Where other composers might use inversion, retrograde, etc. technique to develop their ideas, Seiber takes a part of his series, puts it through a series of permutations, and uses the results for his developmental ideas.

Interestingly, in spite of introducing both innovations—family and permutation—in his first mature twelve-tone composition, Seiber makes only limited use of them. In the first movement, for example, he focuses his attention on subdividing the series into pitch-class sets and deriving motives from them rather than on exploring the possibilities of family. It is in the *Concert Piece for Violin and Piano* and the *Sonata for Violin and Piano* that Seiber fully develops these techniques.

## CHAPTER 3

### CONCERT PIECE FOR VIOLIN AND PIANO (1953-54)

#### INTRODUCTION

The *Concert Piece for Violin and Piano*, written in 1953-54 and dedicated to Tibor Varga, was first performed by Eli Goren and Peter Wallfisch at a fiftieth birthday concert for the composer at Morley College on May 15<sup>th</sup>, 1955.<sup>10</sup> Seiber's intention with this composition was to construct an extended work out of strictly limited material; as a result, he was to focus more upon the subsets of the series than upon the series as a whole.<sup>11</sup> Seiber would develop this idea further in the *Permutazione a Cinque*, which is written in short, sharply juxtaposed sections.<sup>12</sup> In this chapter, I will examine the following aspects of *Concert Piece for Violin and Piano* (hereafter, *Concert Piece*): the permutation among and within the tetrachords; and the structure of the work as a whole.

*Concert Piece* is based on twelve non-repeated notes, all of which may be mapped onto

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<sup>10</sup> Francis Routh, "Mátyás Seiber," *Contemporary British Music* (London: Macdonald, 1972), 154.

<sup>11</sup> Colin Mason, "The Musical Personality of Mátyás Seiber," *The Listener* (31 January 1957), 205.

<sup>12</sup> Hugh Wood, "The Music of Mátyás Seiber," *The Musical Times* 111/1531 (September 1970), 889.

the twelve-tone series<sup>13</sup>; these twelve tones are not arranged in the conventional manner of prime, inversionsal, retrograde, or retrograde-inversionsal form. Instead, the arrangement is based on the permutations of a discrete tetrachord. In other words, the order of the components of each tetrachord is not kept; neither is the order of the three tetrachords kept. All three discrete tetrachords are members of set class (0167). The result, from the point of view of tetrachordal content, is that there are relatively few distinct forms of the series. Since the source tetrachord for this work (0167) is of an all-combinatorial nature, one can partition the series-class into two distinct families based on their shared tetrachordal content.<sup>14</sup>

The interval classes in the prime series become the basic units of pitch-class organization throughout the composition. The three consecutive (0167) tetrachords of the prime series govern the work motivically as well as harmonically, and with the exception of three discrete passages, which I will examine in Section 4.3, the permutations of the tetrachords are found throughout the work.

The structure of *Concert Piece* is that of a free fantasy built on contrasting sections that vary in tempo, texture, and character. These sections are repeated in varied form after a middle section, with the motives in the first half being related to the motives of the equivalent recurring section. This gives the work as a whole the feeling of being symmetrical.

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<sup>13</sup> I believe that the bass clef in m. 9 of the piano does not conform to the serial plan of the work, which otherwise contains no exceptions at all. On that basis, I assume it is a misprint for the serially correct treble clef. I also believe that the third note of the piano (ordered position 6) in m. 10 of the piano is a misprint of the serially correct C.

<sup>14</sup> In an article by Colin Mason from 1957, he notes that the twelve notes are being arranged in three identical groups of four (each of a perfect fourth enclosed in a perfect fifth), the whole series having only one possible transposition—a semitone away. This corresponds to my analysis, which is based on two families.

## **ANALYSIS**

In the analysis that follows, I will focus primarily on arrangement of the pitch-classes and compositional structure. Regarding pitch-classes, I examine four factors: the initial twelve notes, the tetrachords, the families, and the nature of the permutation. After full examination of the twelve notes first presented in the opening measure of the violin, I turn to the subdivision of the twelve-tone series into tetrachords. I then explore the concept of family, which I will demonstrate is derived from the intrinsic structure of each tetrachord. The arrangement of the tetrachords will highlight the issue of permutation within and among the tetrachords with all possible combinations of the components. Concerning structure, I will demonstrate that the piece is symmetrical. The distinct characters and tempo markings of the first half reappear in the second half in reverse order. Seiber uses the symmetrical aspect not only for the individual tetrachords, but also for the structure of the work as a whole.

## **THE ARRANGEMENT OF THE PITCH-CLASSES**

### **3.1. The Twelve-Tone Series**

Example 3.1a below illustrates the twelve notes of the series  $P_1$  as first presented in m. 1 of the violin; the entire composition is based on these twelve notes.

### Example 3.1 The Twelve Notes of the Series P<sub>1</sub>

#### a. Presentation of the Series P<sub>1</sub> in m. 1 of the Score

**Presto** (♩ = c. 132)

**f détaché**

In order to show the twelve notes and their ordered positions more clearly, I have transcribed them without rhythmic values (see Example 3.1b below).

#### b. The Ordered Positions of Series P<sub>1</sub> without Rhythmic Values

In the opening two measures of *Concert Piece*, Seiber weaves this series into the violin and piano parts in multiple ways (see Example 3.2a below). The full series is stated twice melodically in the violin part (P<sub>1</sub>a), once harmonically in the piano part (P<sub>1</sub>b), and three times as a melodic-harmonic synthesis of the two parts combined; for example, by combining unordered positions 9-12 in the accompaniment with ordered positions 1-8 in the melody, all twelve notes of series P<sub>1</sub> are present (P<sub>1</sub>c). The simultaneous presence of the series in violin, piano, and the two parts combined, I call the "multi-dimensional" presentation of the series (see Example 3.2b below).

**Example 3.2 The Multi-Dimensional Presentation of the Series  $P_1$  in mm. 1-2**

**a. The Original Presentation of mm. 1-2**

**Presto** (J. c. 132)

The musical score for mm. 1-2 is presented in three systems. The first system is a single melodic line in treble clef, marked *f détaché*, with two boxed sections labeled  $P_1a$ . The second system is a piano accompaniment in grand staff (treble and bass clefs), marked *f*, with a boxed section labeled  $P_1b$ . The third system consists of three boxed sections labeled  $P_1c$ ,  $P_1d$ , and  $P_1e$ , which are transcriptions of the series without rhythmic values. Fingerings and articulation marks are present throughout the score.

**b. The Multi-Dimensional Presentation of Series  $P_1$  Transcribed without Rhythmic Values ( $P_1c$ )**

The musical score for  $P_1c$  consists of three staves. The first staff is in treble clef with a key signature of one sharp (F#) and contains notes 2, 3, 4, 5, 6, and 8. The second staff is in treble clef with a key signature of one flat (Bb) and contains notes 10 and 9. The third staff is in bass clef with a key signature of one sharp (F#) and contains notes 12 and 11.

When the prime series is presented multi-dimensionally, the tetrachords of the violin and piano are exchangeable: that is, the full series is present in each part individually, as well as in both parts combined. Seiber uses this presentation throughout the first section until the *meno mosso* begins in m. 17. Thereafter, he uses a single-dimensional presentation of the series in which the tetrachords of each part are not exchangeable (see Example 3.3 below).

### Example 3.3 The Single-Dimensional Presentation of the Series $P_1$ , mm. 17-19

Meno mosso (♩. c. 66-72)

The score shows the violin and piano parts for measures 17-19. The violin part is divided into two sections: mm. 17-18 (labeled  $P_1$ ) and mm. 18-19 (labeled  $P_7$ ). The piano part is also divided into two sections: mm. 17-18 and mm. 18-19. The violin part in mm. 17-18 is marked *sul pont.* and *pp*, with fingerings 5, 6, 7, 8, 9, 10. The violin part in mm. 18-19 is marked *col legno*, *pizz.*, and *arco*, with fingerings 2, 7, 8, 9, 10, 11. The piano part in mm. 17-18 is marked *P salto voce*, with fingerings 1, 2, 3, 6, 7, 11, 12. The piano part in mm. 18-19 has fingerings 1, 2, 4, 6, 8, 10, 11.

The series  $P_1$  is presented in mm. 17-18 and the series  $P_7$  in mm. 18-19.

In the single-dimensional presentation, the series does not appear independently in either the violin or the piano. Only when both parts are combined is the complete series present. Seiber alternates between these two presentations of series  $P_1$  throughout the piece.



With six appearances, ic 1 is the most significant interval in the prime series.

The twelve-tone series  $P_1$  may be subdivided into three consecutive (0167) tetrachords, each of which can be mapped onto the twelve-tone series (see Example 3.5 below); I call these tetrachords X, Y, and Z. Given the fact that *Concert Piece* is based on the permutation of these tetrachords, they are the most important pitch-class sets of the entire composition.

### Example 3.5 The X, Y, Z Tetrachords of the Prime Series

The image shows a single musical staff with a treble clef. It contains three tetrachords, each consisting of four notes. Above the staff, three brackets group the notes into three sets. The first set is labeled [C#, D, Ab, G] and X (0167). The second set is labeled [C, B, F, F#] and Y (0167). The third set is labeled [Bb, A, D#, E] and Z (0167). The notes are written as quarter notes on the staff.

Generation of the series from three forms of (0167) is the principal organizational feature of the prime series. The tetrachord (0167) is itself symmetrical in structure, (ic 1 - ic 6 - ic 1), and this symmetrical structure is applied to each of the three discrete tetrachords. The relationships between the tetrachords are  $T_1I$ ,  $T_7I$ ,  $T_4$  and  $T_{10}$ ; each tetrachord maps onto itself.

### 3.3. The Families

Example 3.6 below presents the 48 members of the series-class in a 12 x 12 matrix:

### Example 3.6 The 48 Members of the Series-Class

$P_1 \Rightarrow$

1	2	8	7	0	11	5	6	10	9	3	4
0	1	7	6	11	10	4	5	9	8	2	3
6	7	1	0	5	4	10	11	3	2	8	9
7	8	2	1	6	5	11	0	4	3	9	10
2	3	9	8	1	0	6	7	11	10	4	5
3	4	10	9	2	1	7	8	0	11	5	6
9	10	4	3	8	7	1	2	6	5	11	0
8	9	3	2	7	6	0	1	5	4	10	11
4	4	11	10	3	2	8	9	1	0	6	7
5	6	0	11	4	3	9	10	2	1	7	8
11	0	6	5	10	9	3	4	8	7	1	2
10	11	5	4	9	8	2	3	7	6	0	1

Like the String Quartet No. 2, in which Seiber's choice of prime series results in a series-class that may be partitioned, based on the (0123) and (0167) source tetrachords, into six families, the series-class of *Concert Piece*, which is based on three (0167) source tetrachords, may be partitioned into two families.<sup>15</sup> Table 3.2 below illustrates the tetrachords X, Y, Z of family I, and U, V, W of family II:

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<sup>15</sup> For my explanation of "family" see Chapter 2, pp. 28-29.

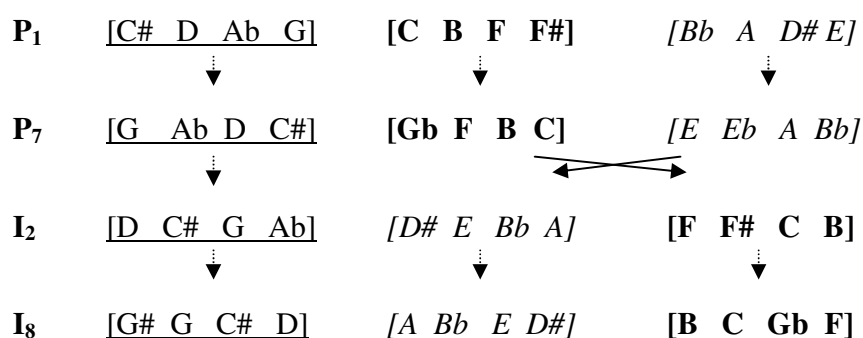
**Table 3.2 The Series-Class Divided into Two Families**

The relationship of P's and I's in each family is $T_{2n+1}I$ .	<b>Family I</b>	$P_1$	X [C# D Ab G]	Y [C B F F#]	Z [Bb A D# E]
		$P_3$	Z [D# E Bb A]	X [D C# G Ab]	Y [C B F Gb]
		$P_5$	Y [F Gb C B]	Z [E D# A Bb]	X [D C# G Ab]
		$P_7$	X [G Ab D C#]	Y [Gb F B C]	Z [E Eb A Bb]
		$P_9$	Z [A Bb E D#]	X [Ab G C# D]	Y [Gb F B C]
		$P_{11}$	Y [B C F# F]	Z [Bb A D# E]	X [Ab G C# D]
		$I_0$	Y [C B F Gb]	X [C# D Ab G]	Z [D# E Bb A]
		$I_2$	X [D C# G Ab]	Z [D# E Bb A]	Y [F F# C B]
		$I_4$	Z [E Eb A Bb]	Y [F Gb C B]	X [G G# D Db]
		$I_6$	Y [F# F B C]	X [G Ab D C#]	Z [A Bb E Eb]
		$I_8$	X [G# G C# D]	Z [A Bb E D#]	Y [B C Gb F]
	$I_{10}$	Z [Bb A Eb E]	Y [B C Gb F]	X [C# D Ab G]	
	<b>Family II</b>	$P_0$	U [C Db G F#]	V [B Bb E F]	W [A Ab D Eb]
		$P_2$	W [D Eb A G#]	U [Db C F# G]	V [B Bb E F]
		$P_4$	V [E F B Bb]	W [Eb D G# A]	U [C# C F# G]
		$P_6$	U [F# G Db C]	V [F E A# B]	W [D# D G# A]
		$P_8$	W [G# A Eb D]	U [G F# C Db]	V [F E Bb B]
		$P_{10}$	V [Bb B F E]	W [A G# D Eb]	U [G F# C Db]
		$I_1$	U [Db C F# G]	W [D Eb A G#]	V [E F B Bb]
		$I_3$	W [Eb D G# A]	V [E F B Bb]	U [F# G C# C]
		$I_5$	V [F E Bb B]	U [F# G Db C]	W [G# A Eb D]
		$I_7$	U [G F# C Db]	W [Ab A Eb D]	V [Bb B F E]
$I_9$		W [A G# D Eb]	V [Bb B F E]	U [C C# G F#]	
$I_{11}$	V [B Bb E F]	U [C C# G F#]	W [D Eb A G#]		

The two families described in Table 3.2 above are related by shared tetrachordal content.

Example 3.7 below illustrates the shared content of family I in greater detail:

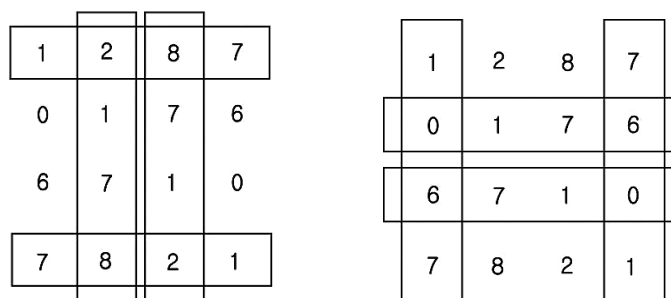
**Example 3.7 The Series P<sub>1</sub>, P<sub>7</sub>, I<sub>2</sub> and I<sub>8</sub> of Family I\***



\*The arrows show the identical contents of the unordered collection of pitch-classes of each tetrachord

Example 3.8 below shows the first tetrachords of series P<sub>1</sub>, P<sub>7</sub>, I<sub>2</sub>, I<sub>8</sub>, and series P<sub>0</sub>, P<sub>6</sub>, I<sub>1</sub>, and I<sub>7</sub>, all of which share the same tetrachordal content.

**Example 3.8 Shared Content among Tetrachords**



Whereas in the String Quartet No. 2, Seiber does not focus on the families of his series-class, in *Concert Piece*, he uses the two families to express what might otherwise be called harmonic areas in the conventional sense. These areas are illustrated below in Table 3.3:

**Table 3.3      Distribution of Harmonic Areas / Families**

<b>Family</b>	<b>Measures</b>
Family I	mm. 1-126
Family II	mm. 127-187
Family I	m. 188

I note that Seiber does not freely alternate among his harmonic areas; rather, he explores the first, shifts to the second, and ends with a brief reprise of the first area. This confirms his intention to work within a narrowly constrained harmonic language. In *Sonata for Violin and Piano* (1960), written six years later, he will take the idea of harmonic areas even further, employing the same technique but basing the composition on a series-class divided into four families.

### **The Two Levels of Permutation**

Seiber does not use conventional twelve-tone technique to further develop the prime series of *Concert Piece*, so it is not fruitful to analyze his composition for inversion, retrograde,

or retrograde-inversion of the series. Instead, he takes the (0167) tetrachords X, Y, and Z and performs a series of permutations on them that occur on two levels: permutation of the three tetrachords, and permutation of pitch-classes within each tetrachord.

### **3.4. Permutation of the Three Tetrachords**

The three (0167) tetrachords of the prime series are exchangeable and may be identified in the melody, the accompaniment, and multi-dimensionally in melody and accompaniment. If *Concert Piece* had been composed using conventional twelve-tone technique, the order of tetrachords would have been XYZ, XYZ, XYZ. Rather than follow this order, Seiber takes his three (0167) tetrachords and with them forms six combinations:

### Example 3.9 The Tetrachords X, Y, and Z

#### a. (0167) Tetrachords X, Y, and Z in m.1

**Presto** (♩ = c. 132)

*f détaché*

#### b. The Six Combinations of Tetrachords X, Y, and Z

1. XYZ (ordered positions 1-4, 5-8, 9-12);
2. YXZ (ordered positions 5-8, 1-4, 9-12);
3. YZX (ordered positions 5-8, 9-12, 1-4);
4. ZYX (ordered positions 9-12, 5-8, 1-4);
5. ZXY (ordered positions 9-12, 1-4, 5-8);
6. XZY (ordered positions 1-4, 9-12, 5-8).

The combination of the three tetrachords varies throughout *Concert Piece*. Example 3.10 below presents the first complete statement of all six combinations; note that Seiber repeats each tetrachordal combination (i.e., XYZ-XYZ) before introducing the next:

### Example 3.10 mm. 1-11 in the Violin

*Presto* (♩. c 132)

Combination 1 (2x)

Combination 2 (2x)

*f détaché*

Combination 3 (2x)

Combination 4 (2x)

Combination 5 (2x)

(*meno f*) *più f*

Combination 6 (2x)

*mp leggero* (l.h. pizz.) pizz. arco

It is the constantly changing order of tetrachordal combinations that constitutes the first level of Seiber's permutation technique.

### 3.5. Permutation of Pitch-Classes within Tetrachords

In the second type of permutation, pitch-classes within tetrachords are maintained while the order of notes is varied. Performing this permutation on ordered positions 1-4 results in 24 forms of the tetrachord X (the patterns are the same for the Y and Z tetrachords with ordered positions 5-8 and 9-12):

### Example 3.11 Permutation within Tetrachord X with Ordered Positions 1-4

Example 3.11 displays four staves of music, each showing a tetrachord permutation labeled with a letter (a through l) and its corresponding ordered positions (fingerings) below the staff. The key signature is one sharp (F#).

- Staff 1: a (1 2 3 4), b (1 2 4 3), c (1 3 4 2), d (1 3 2 4), e (1 4 2 3), f (1 4 3 2)
- Staff 2: a (4 3 2 1), b (4 3 1 2), c (4 2 1 3), d (4 2 3 1), e (4 1 3 2), f (4 1 2 3)
- Staff 3: g (2 1 3 4), h (2 1 4 3), i (2 3 1 4), j (2 3 4 1), k (2 4 1 3), l (2 4 3 1)
- Staff 4: g (3 4 2 1), h (3 4 1 2), i (3 2 4 1), j (3 2 1 4), k (3 1 4 2), l (3 1 2 4)

Permutation within tetrachords X, Y, and Z is apparent within the first two measures of the violin. In Example 3.12 below, the series  $P_1$  is presented in m. 1 with ordered positions 1-12; by m. 2, the pitch-classes of  $P_1$  have already begun to be reordered:

### Example 3.12 The Permutation within Tetrachords X, Y, and Z<sup>16</sup>

**Presto** (♩. c. 132)

Example 3.12 shows a violin line in Presto tempo (♩. c. 132). The notation includes two boxed  $P_1$  series above the staff, each with three tetrachords labeled X, Y, and Z. Fingerings are indicated below the notes. The first measure is marked *f détaché*.

<sup>16</sup> I call the second series  $P_1$ , but it could also be called  $P_3$ ,  $P_5$ ,  $P_7$ ,  $P_9$ , etc. since all these series-forms share the same tetrachordal content and belong to the same family.

As with Seiber's ever-changing tetrachordal combinations, the constant re-ordering of pitch-classes within tetrachords constitutes the second level of his permutation technique.

### **3.6. Three Exceptions**

The notes of ordered positions 1-4, 5-8, 9-12 are nearly always adjacent, regardless of whether they appear in the violin or the piano separately, or are spread throughout both parts; this follows logically from Seiber's permutational technique. There are, however, three places in which the notes of the tetrachord are not adjacent, either in violin, piano, or both parts combined. In these places Seiber has split each tetrachord into a pair of dyads, then recombined the six pairs into two hexachords. In the piano, the tetrachords of the prime series are likewise divided into dyads and recombined into three tetrachords consisting of non-adjacent dyads; these three new tetrachords accompany the two hexachords of the violin in a brief, ascending-descending scalar run. Seiber retains the same pattern of pitch-classes each time this idea returns but varies the rhythmic organization so that in the first passage the violin part moves in sixteenth-note sextuplets (see Example 3.13a below); in the second passage, eighth notes (see Example 3.13b below); in the last passage, unaltered sixteenth notes (Example see 3.13c below).

### Example 3.13 The Three Exceptions

#### a. First Passage mm. 26-27<sup>17</sup>

Violin part: arco, sotto voce flautando. Positions: P7, l4. Fingerings: 1 2 7 8 10 9 4 3 6 5 11 12, 1 2 7 8 10 9 4 3 6 5 11 12.

Piano part: pp delicato. Positions: P1, P9. Fingerings: 1 4 3 5 12, 1 2 3 6 11; 1 2 3 8 11, 1 2 3 6 11; 10 4 5, 10 4 5.

#### b. Second Passage mm. 150-151

Più mosso (♩. c. 132)

Violin part: Più mosso (♩. c. 132). Positions: P10, l7. Fingerings: 1 2 7 8 10 9 4 3 6 5 11 12, 1 2 7 8 10 9 4 3 6 5 11 12.

Piano part: Positions: P8, P0. Fingerings: 1 5 4, 1 3 6; 2 11 4, 2 8 5; 10 8 3, 10 8 3; 9 6, 9 6.

<sup>17</sup> The break between staves indicates the excerpt is taken from the middle of the bar.

c. Third Passage mm. 185-188

scorrevole, leggiero

leggeriss.

(loco)

P8

P4

P10

3

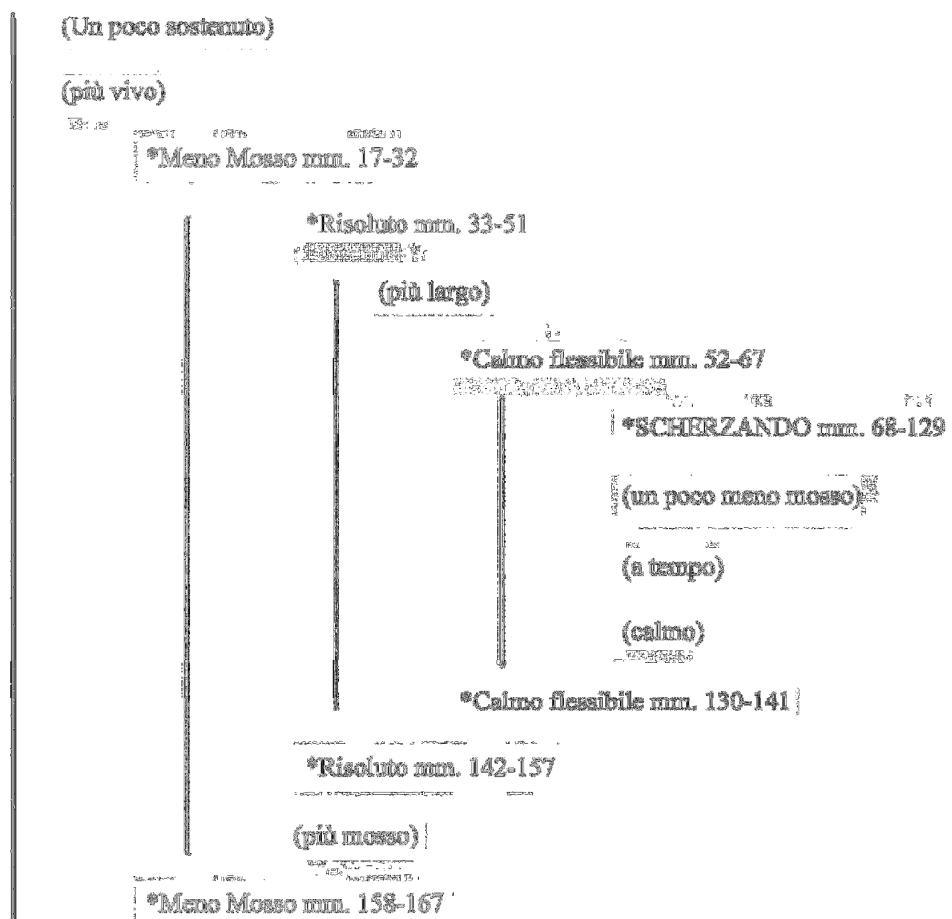
## FORM

### 3.7. Structure

*Concert Piece* is written in free fantasy form, with tempi and character changes dividing the music into nine distinct sections (see Example 3.14 below):

**Example 3.14 (to be read: top-left to right-center to bottom-left): Structure**

\*Presto mm. 1-16



\*Presto mm. 168-188

\*: repeated after Scherzando

( ): non repeated or new material

As may be seen from Example 3.14 above, mm. 68-129 form the center of the composition; those sections in the example marked with an asterisk occur both before this central section and are repeated—in reverse order—following it. The structure of *Concert Piece* is therefore symmetrical, with the *Scherzando* marking the center. The progression of the first half, however, is not strictly maintained in the second half: the smaller tempo changes, marked with round brackets in the first half, are either left out or changed in the second half, or new tempo markings added. Nevertheless, the main motives of each equivalent section are related.

Motive A of the *Presto* (see Example 3.15 below) has continuous sixteenth notes in the violin that are sustained through the *un poco sostenuto* in m. 9, and the pitch classes of the violin are arranged so that there is an emphasis on the interval class 1. Through m. 6, the piano part consists of tetrachords that can all be mapped onto the twelve-tone series; starting m. 7, however, the piano adopts the sixteenth-note figure of the violin and interval class 1, now present in sixteenth-notes in both the right and left hand of the piano, assumes prominence. Motive A returns in m. 168 of the *Presto* (see Example 3.15 below), though here the tempo is faster than in the opening *Presto* and the tetrachords of the piano are now stated contrapuntally, rather than vertically.

**Example 3.15 Motive A, *Presto* mm. 1-2 and mm. 168-69**

*Presto* (♩. c. 132)

Motive A

mm. 1-2

*Presto* (♩. c. 152)

Motive A

mm. 168-69

Motive B occurs in the *Meno mosso* in m. 17 (see Example 3.16 below). This motive is characterized by short, pointillistic notes shared between violin and piano. The violin alternates between pizzicato notes and tremolo notes to be played with a specific bow stroke (*sul ponticello* or *col legno*); the dynamic is marked *piano*. When the *Meno mosso* returns in m. 158 (see Example 3.16 below), the original rhythm is maintained, but the melodic shape in the violin as well as in the piano is inverted. Likewise, the notes of the violin alternate between pizzicato and tremolo notes, but the bow stroke to be used is *battuto* or *arco saltando*, and the dynamic is now *forte*.

**Example 3.16 Motive B, *Meno mosso* mm. 17-19 and mm. 158-160**

*Meno mosso* (♩. c. 66-72)  
Motive B

*pp*  
*P soffo voce*

mm. 17-19

*Meno mosso* (♩. c. 66-72)  
Motive B

*f battuto*  
*f stridente*

mm. 158-160

Motive C (see Example 3.17 below) begins with the *Risoluto*, m. 33. The cognate motive in the *Risoluto*, m. 142, maintains the original rhythms as well as the *forte* character of this motive, but varies the pitch-classes (see Example 3.17 below). Seiber inverts the beginning of the motive but thereafter retains the original melodic shape so that one can clearly identify this motive in both sections.

**Example 3.17 Motive C, *Risoluto* mm. 33-34 and mm. 142-43**

**Risoluto** (♩. c. 100-104)  
Motive C

mm. 33-34

**Risoluto** (♩. c. 100)  
Motive C

mm. 142-43

The fourth section is marked *Calmo, flessibile*. Motive D (see Example 3.18 below) consists of a very melodic line in the violin and arpeggiated notes in the piano. When the *Calmo, flessibile* returns in m. 130 (see Example 3.18 below), the original motivic material is again repeated with slight variations. The pitch-classes of the piano part are varied, but the arpeggiated sixteenth-note figures are kept; likewise the lyrical idea in the violin is kept while the pitch-classes are varied and the rhythms prolonged. The general tempo and mood of the first half are maintained in the second half.

**Example 3.18 Motive D, *Calmo, flessibile* mm. 52-53 and mm. 130-32**

*Calmo, flessibile* (♩. c. 60)  
Motive D

mm. 52-53

*Calmo, flessibile* (♩. c. 66-72)  
Motive D

mm. 130-32

Finally the *Scherzando*, mm. 68-129, forms the center of the work, dividing it into two symmetrical parts. The main motive (see Example 3.19 below), like that of the *Meno mosso*, is also pointillistic, with the notes of the violin alternating between pizzicato and *arco*, but the character and general mood of the *Scherzando* are lighter than those of the *Meno mosso*.

**Example 3.19 *Scherzando* mm. 68-69**

*Scherzando* (♩. c. 80)

mm. 68-69

Seiber does not relate the harmonic areas of *Concert Piece*, of which there are only two, to its nine structural sections. In other words, the two families which comprise his harmonic language (cf. 3.3, Table 3.3) are neither governed nor affected by changes to tempo or time signature. Rather, the unfolding of the harmonic language and the division of *Concert Piece* into discrete sections are essentially independent phenomena.

## CONCLUSION

*Concert Piece* shows that by 1954, Seiber had already established his own means of interpreting and applying twelve-tone technique. *Concert Piece* is clearly twelve-tone in principle, but the material is not developed by conventional twelve-tone processes. Instead, the three (0167) tetrachords X, Y, and Z are subjected to a series of permutations that occur both among the tetrachords and within them. Because the (0167) tetrachord is of an all-combinatorial nature, the 48 members of the set-class may be divided into two families, which represent certain harmonic areas in the conventional sense. Ultimately, the entire "harmony" is based on the initial (0167) tetrachords of the prime series.

Twelve-tone technique—by definition—imposes considerable restrictions upon the composer, not the least of which is the necessity to work within the limits of the prime series. In *Concert Piece*, Seiber chose to restrict himself even further, using just a single tetrachord of the prime series. His composition nevertheless displays remarkable inventiveness, and despite—or perhaps because of—the fundamental simplicity of his source materials, his creation is both wonderfully complex and endlessly interesting.

## CHAPTER 4

### SONATA FOR VIOLIN AND PIANO (1960)

#### INTRODUCTION

The *Sonata for Violin and Piano* (hereafter *Sonata*), written in the last year of his life, is Mátyás Seiber's final chamber work. It was commissioned by the B.B.C. for the Cheltenham Festival and first performed on July 7<sup>th</sup>, 1960 by Tibor Varga and Hilde Findeisen.<sup>18</sup> It consists of three movements: a rhapsodic opening movement, a dance-like second movement, and a slow final movement.

Seiber's mature compositional style is evident in the opening movement of *Sonata*: the pitch-classes are strictly serial<sup>19</sup> and each note is mappable onto the series. At the same time, the tempi, the varied articulations, and the cadenza-like passage in which the performers have license to change the register of pitch-classes, make the music improvisational, lyrical, and emotional.

*Sonata* is based on a derived twelve-tone series in which all three tetrachords are of the same type. This allows the 48 series-forms to be grouped into families. Instead of the free

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<sup>18</sup> *Sonata for Violin and Piano* (1960), published by Schott & Co. Ltd., London, 1963.

<sup>19</sup> Two chords in the piano, mm. 3-4, cannot be mapped onto the series; the rest, however, is strictly serial.

permutation observed in Chapter 3, the relatively free treatment of the serial ordering of this piece results in a series of patterns that can be identified by their pitch-class content.

Seiber continues to use the concept of family—i.e., discrete groups of twelve-tone series first used in the String Quartet No. 2—but brings the idea to a new level of sophistication in *Sonata*. The degenerate nature of the series (derived from 0123) permits the partitioning, according to pitch-class content, of the series-class into four families, which function as keys in the conventional sense. Seiber uses these families to represent “harmonic” areas in the following ways: a) singly, i.e., by remaining in one family throughout a section before “modulating” to a second family / section; or b) by using two families simultaneously.

As is true of many 20<sup>th</sup>-century compositions titled “Sonata,” none of the movements of Seiber’s *Sonata* were composed in strict sonata-allegro form. The first movement is in ABA' form, and the second movement resembles a rondo. The last movement is organized: Introduction-A-B-A-B-A-Coda.

The first movement presents two themes in the beginning of the A section that are developed throughout the movement. The B section has a striking improvisational passage in which both players are asked to improvise. Both themes are restated in the A' section, but in different families. This movement is notable for its many tempo changes and rubati that give the music the feeling of gradually speeding up or slowing down.

## ANALYSIS

In this chapter, I will analyze the opening movement of *Sonata* by first illustrating the arrangement of the pitch-classes with a four-fold examination of: a) the twelve-tone series and its multi-dimensional presentation; b) the (0123) tetrachords that generate the twelve-tone series; c) the patterns by which the ordered positions are arranged; and d) the four families.

I then examine the first movement for form, which I identify as ABA'. There are two contrasting themes in the A section and an improvisational B section. I then illustrate the many tempo changes throughout the movement which give the music an overall feeling of gradually speeding up or slowing down. I conclude with a brief analysis of the second and third movements.

## THE ARRANGEMENT OF THE PITCH-CLASSES

### 4.1. The Twelve-Tone Series

Example 4.1a below shows the twelve notes of series  $P_{11}$  as presented in mm. 1-2 of the violin.

#### Example 4.1 The Twelve Notes of Series $P_{11}$

##### a. Presentation of Series $P_{11}$ in mm. 1-2 of the Score

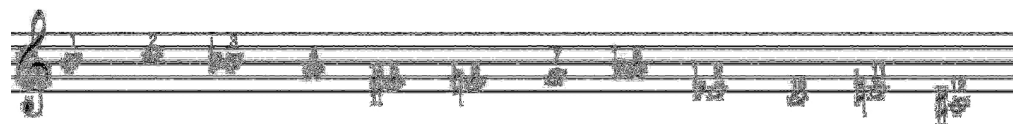
Appassionato e rapsodico (♩ = 72-76)

$P_{11}$

*f marc.*

Example 4.1b below illustrates the series in ordered position, transcribed without rhythmic values and transposed to the same octave.

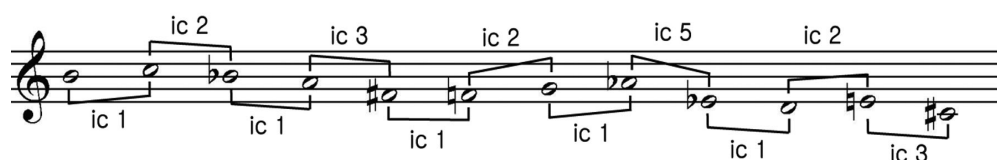
**b. The Ordered Positions of Series P<sub>11</sub> without Rhythmic Values**



Example 4.2a below presents the interval classes of the prime series as transcribed and transposed in Ex. 4.1b above.

**Example 4.2 The Interval Classes**

**a. Interval Classes in the Prime Series**



Of all interval classes used in the first movement, the most important are 1 and 3 (see Example 4.2a above and Table 4.1 below). Interval class 1 (hereafter ic) is the most frequent and is therefore an essential element; ic 3, while it does not appear as frequently in the melodic contour, is a main element in the vertical chords of the piano (see Example 4.2b below).

**b. Interval Class 3, Piano m. 1**

The image shows a musical score for Piano, measure 1. It consists of two staves: a treble staff and a bass staff. The key signature has one flat (B-flat), and the time signature is 4/4. The score includes a dynamic marking of *f marc.* (forte marcato). Several instances of Interval Class 3 (ic 3) are labeled on the notes in both staves. The treble staff has notes on the 2nd, 4th, and 5th lines, while the bass staff has notes on the 2nd, 3rd, and 4th lines. The labels 'ic 3' are placed above or below the notes to indicate the interval class between adjacent notes.

**Table 4.1 Interval Classes and Frequency**

ic	Frequency
1	5
2	3
3	2
5	1

The analysis that follows will show that ic 1 appears mainly in a melodic context, while ic 3 is used primarily in the accompaniment.

## 4.2. The Tetrachords

In my analysis I demonstrate that the most important set-class is the (0123) of the discrete tetrachord.

### Example 4.3 The Three Tetrachords of the Prime Series

#### a. Tetrachords X, Y, and Z

[B, C, Bb, A]  
 X (0123)

[F#, F, G, Ab]  
 Y (0123)

[Eb, D, E, C#]  
 Z (0123)

The series  $P_{11}$  consists of three consecutive (0123) tetrachords, which I call X, Y, and Z (see Example 4.3a above). Generation of the series from three forms of (0123) is the principal organizational feature of the prime series. The first and second (0123) tetrachords are symmetrical in structure and are related by  $T_4$  and  $T_5I$ ; the components of the last tetrachord map onto each other dyadically. Example 4.3b below shows the X, Y, Z tetrachords and their relationship to each other.

#### b. Relationships of Tetrachords X, Y, and Z

$P_{11}$

X Y Z

1 2 3 4 5 6 7 8 9 10 11 12

$I_6$

1 2 3 4 5 6 7 8 9 10 11 12

Whereas the pitch-classes of the violin mostly follow the ordered positions of the series, analysis of the pitch-classes of the accompaniment reveals the following patterns. The main elements are tetrachords whose set-classes are primarily—though not exclusively—(0147) and

(0134); certain exceptions are (0125), (0158), and (0145). When presented multi-dimensionally, the series is created by combining set-class (0123) of the melody with the two set-classes (0147) and (0134) of the accompaniment (see Example 4.4a below). The order of the two tetrachords (0147) and (0134) is switched at times (see Example 4.4b below). The combination of (0123) with (0147) and (0134) is shown at the beginning (m. 1) and is the most frequently used. Variation among the ordered positions of the pitch-classes within these three tetrachords also creates certain patterns (see Table 4.2 below).

#### Example 4.4 Patterns in the Tetrachords of the Accompaniment

##### a. (0147) and (0134) in m. 1 of the Piano

Appassionato e rapsodico (♩ = 72-76)

The score shows the piano accompaniment in the first measure. The piano part consists of two staves: a grand staff with a treble clef and a bass clef. The piano accompaniment is in the left hand. The melody is in the right hand. The piano accompaniment is in the left hand. The piano accompaniment is in the left hand. The piano accompaniment is in the left hand.

The analysis on the right shows the set-classes of the piano accompaniment. The (0123) set-class is shown in the treble clef. The (0147) set-class is shown in the bass clef. The (0134) set-class is shown in the bass clef. The piano accompaniment is in the left hand. The piano accompaniment is in the left hand.

##### b. (0134) and (0147) in m. 8 of the Piano

The score shows the piano accompaniment in the eighth measure. The piano part consists of two staves: a grand staff with a treble clef and a bass clef. The piano accompaniment is in the left hand. The melody is in the right hand. The piano accompaniment is in the left hand. The piano accompaniment is in the left hand.

The analysis on the right shows the set-classes of the piano accompaniment. The (0123) set-class is shown in the treble clef. The (0134) set-class is shown in the bass clef. The (0147) set-class is shown in the bass clef. The piano accompaniment is in the left hand. The piano accompaniment is in the left hand.

**Table 4.2      Patterns of Set-Classes (0147) and (0134)**

	<b>Ordered Positions, Set-Class (0147)</b>	<b>Ordered Positions, Set-Class (0134)</b>
<b>1</b>	7, 8, 11, 12	5, 6, 9, 10
<b>2</b>	5, 7, 11, 12	6, 8, 9, 10
<b>3</b>	6, 8, 10, 12	5, 7, 9, 11

These patterns, which appear in the piano throughout the first movement, form contrasting harmonies with the violin's predominant (0123) tetrachord. In other words, the piano part, which is based on the (0147) and (0134) tetrachords, provides the complementary eight notes to the melodic (0123) tetrachord of the violin. Of the three patterns described in Table 4.2 above, pattern no. 1 is the most frequently used in the opening movement. In order to produce these specific harmonies in the piano part, Seiber has to reorganize the series; as the music progresses, these harmonies assume an independent identity. Even though it might not be immediately clear that the accompaniment is derived from the violin's series, I believe that the set-classes in the piano are organized by combining certain dyads from the original twelve-tone series. Due to irregularities and skips in the patterns, and the fact that the patterns themselves do not show a specific relationship to each other, I would not suggest a new series for the accompaniment.

### Example 4.5 Six Dyads of the Prime Series and Four Tetrachords Derived from Them

The diagram shows a musical staff with 12 notes, labeled 1 through 12. A box labeled 'P11' is at the top left. Six dyads are indicated by brackets below the notes: Dyad 1 (notes 1-2), Dyad 2 (notes 3-4), Dyad 3 (notes 5-6), Dyad 4 (notes 7-8), Dyad 5 (notes 9-10), and Dyad 6 (notes 11-12). Brackets above the notes group them into three tetrachords: (0123) covering notes 1-4, (0134) covering notes 5-10, and (0147) covering notes 7-12. A bracket below the notes groups dyads 1 and 6 into a fourth tetrachord, (0125), covering notes 1, 2, 11, and 12.

Example 4.5 above illustrates the six dyads from which the three tetrachords most used in this movement—(0123), (0134), and (0147)—are created. For example: combining dyads 1 and 2 (ordered positions 1-4 of the series) forms the (0123) tetrachord; dyads 3 and 5 combined (ordered positions 5, 6, 9, and 10) form the (0134) tetrachord; dyads 4 and 6 combined (ordered positions 7, 8, 11, and 12) create the (0147) tetrachord. A fourth tetrachord (0125), formed by combining dyads 1 and 6 (ordered positions 1, 2, 11, and 12), is the only tetrachord to imply *ic* 2. The first occurrence of the (0125) tetrachord, as well as the less frequently used (0158) tetrachord, may first be found in m. 4 of the violin (see Example 4.6 below). The series begins with ordered positions [1, 2 and 12, 11] and [7, 8 and 9, 5] which form two (0125) tetrachords; ordered positions [6, 10 and 3, 4] form the (0158) tetrachord.

**Example 4.6 Set-Classes (0125) and (0158) in mm. 4-5 of the Violin<sup>20</sup>**

The image shows two musical staves. The left staff is labeled 'poco string.' and contains a complex melodic line with various ornaments and dynamics like 'cresc.'. The right staff shows a simplified version of the same line with set-class labels (0125) and (0158) above it, indicating the pitch classes used in those segments.

While the first movement of *Sonata* is based on a twelve-tone series, its components are not organized by the regular orders of the twelve-tone series, nor are they based on the permutation of the initial tetrachords of the prime series as in *Concert Piece*. Rather, Seiber transcends the bounds of series-class and tetrachordal derivation by creating certain patterns that show a more flexible language than the strict series. These newly created patterns are used consistently throughout the opening movement, mainly in the accompaniment of the piano. Seiber's ability to form these new patterns from the existing twelve-tone matrix shows his compositional technique at its most creative and mature point.

### 4.3. The Families

Example 4.7 below presents the 48 members of the series-class in a 12 x 12 matrix:

<sup>20</sup> The break between staves indicates the excerpt is taken from the middle of the bar.

### Example 4.7 The 48 Members of the Series-Class

$P_{11} \Rightarrow$

11	0	10	9	6	5	7	8	3	2	4	1
10	11	9	8	5	4	6	7	2	1	3	0
0	1	11	10	7	6	8	9	4	3	5	2
1	2	0	11	8	7	9	10	5	4	6	3
4	5	3	2	11	10	0	1	8	7	9	6
5	6	4	3	0	11	1	2	9	8	10	7
3	4	2	1	10	9	11	0	7	6	8	5
2	3	1	0	9	8	10	11	6	5	7	4
7	8	6	5	2	1	3	4	11	10	0	9
8	9	7	6	3	2	4	5	0	11	1	10
6	7	5	4	1	0	2	3	10	9	11	8
9	10	8	7	4	3	5	6	1	0	2	11

The prime series of *Sonata*, like those of the String Quartet No. 2 and the *Concert Piece*, yields a series-class that is divisible into families.<sup>21</sup> Whereas the series-class of the quartet is based on source tetrachords (0123), (0167), and (0123), those of *Concert Piece* are based on three (0167) source tetrachords, and those of *Sonata*, on three (0123) source tetrachords. And whereas the series-class of *Concert Piece* is divisible into two families, that of *Sonata* is divisible into four families; Table 4.3 below illustrates these four families:

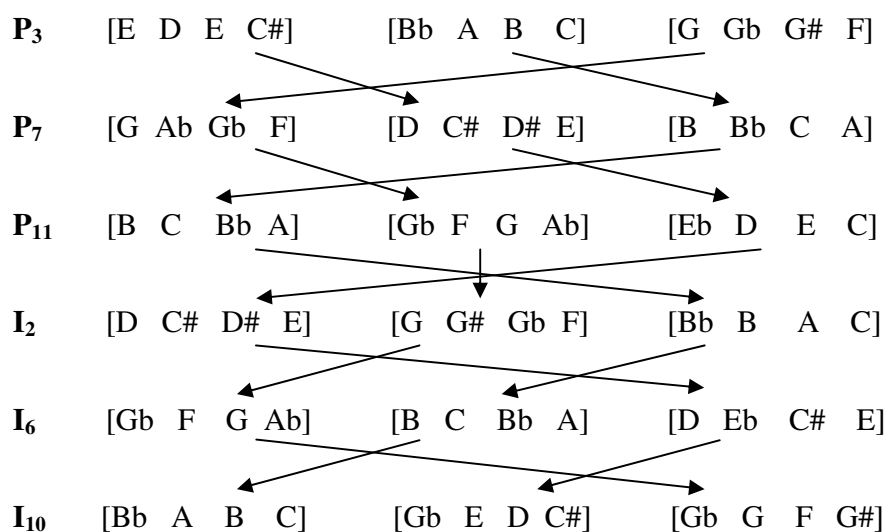
<sup>21</sup> For prior discussions of “family” see Chapters 2, pp. 25-29, and 3, pp. 56-60.

**Table 4.3 The Series-Class Divided into Four Families**

The relationship between P's and I's in each family is $T_{4n+1}I$ .	<b>Family I</b>	<b>P<sub>3</sub></b> [Eb E D C#] [Bb A B C] [G Gb G# F]
		<b>P<sub>7</sub></b> [G Ab Gb F] [D C# D# E] [B Bb C A]
		<b>P<sub>11</sub></b> [B C Bb A] [Gb F G Ab] [Eb D E C#]
		<b>I<sub>2</sub></b> [D C# D# E] [G G# Gb F] [Bb B A C]
		<b>I<sub>6</sub></b> [Gb F G Ab] [B C Bb A] [D Eb C# E]
		<b>I<sub>10</sub></b> [Bb A B C] [Eb E D C#] [Gb G F G#]
	<b>Family II</b>	<b>P<sub>1</sub></b> [C# D C B] [Ab G A Bb] [F E F# D#]
		<b>P<sub>5</sub></b> [F Gb E Eb] [C B C# D] [A Ab Bb G]
		<b>P<sub>9</sub></b> [A Bb Ab G] [E Eb F Gb] [Dd C D B]
		<b>I<sub>0</sub></b> [C B C# D] [F Gb E Eb] [Ab A G Bb]
		<b>I<sub>4</sub></b> [E D# F Gb] [A Bb Ab G] [C Db B D]
		<b>I<sub>8</sub></b> [Ab G A Bb] [Db D C B] [E F Eb Gb]
The relationship between P's and I's in each family is $T_{4n+3}I$ .	<b>Family III</b>	<b>P<sub>2</sub></b> [D Eb Db C] [A G# Bb B] [F# F G E]
		<b>P<sub>6</sub></b> [F# G F E] [Db C D D#] [Bb A B Ab]
		<b>P<sub>10</sub></b> [Bb B A G#] [F E F# G] [D Dd D# C]
		<b>I<sub>1</sub></b> [C# C D Eb] [F# G F E] [A Bb G# B]
		<b>I<sub>5</sub></b> [F E F# G] [Bb B A G#] [Db D C Eb]
		<b>I<sub>9</sub></b> [A G# Bb B] [D Eb C# C] [F F# E G]
	<b>Family IV</b>	<b>P<sub>0</sub></b> [C Db B Bb] [G F# G# A] [E D# F D]
		<b>P<sub>4</sub></b> [E F D# D] [B A# C C#] [G# G A F#]
		<b>P<sub>8</sub></b> [G# A G F#] [D# D E F] [C B C# A#]
		<b>I<sub>3</sub></b> [D# D E F] [G# A G F#] [B C A# C#]
		<b>I<sub>7</sub></b> [G F# G# A] [C C# B A#] [D# E D F#]
		<b>I<sub>11</sub></b> [B A# C C#] [E F D# D] [G G# F# A]

The four families illustrated in Table 4.3 above are related by their shared tetrachordal content. Example 4.8 below illustrates the shared content of family I in greater detail:

**Example 4.8 The Series P<sub>3</sub>, P<sub>7</sub>, P<sub>11</sub> and I<sub>2</sub>, I<sub>6</sub> and I<sub>10</sub> of Family I\***



\*The arrow shows the identical contents of the unordered collection of the pitch-classes of each tetrachord

It is in *Concert Piece*, whose series-class is divisible into two families, that Seiber begins to explore the use of family in a way that can be seen as analogous to the classical definition of harmony. In *Sonata*, written only six years after *Concert Piece*, Seiber uses the four families of the series-class as the equivalent of specific harmonic areas, either shifting between them (Example 4.9a below) or occupying two of them simultaneously—i.e., the twelve-tone equivalent of bi-tonality (see Example 4.9b below).

### Example 4.9 Families I and III

#### a. Alternation between Families I and III, mm. 31-35

Example 4.9a shows a musical score for measures 31-35. The score is in 4/4 time and features a tempo of "Energico, violente (♩ = c.76)". The score includes dynamic markings such as *rit.*, *sul D (♯)*, *rit. e dim.*, *pp*, and *ff*. The piano part shows complex chordal textures with fingerings and articulation marks. The score is divided into sections for Family I (P7, I10) and Family III (P6). The piano part includes markings like *rit. e dim.*, *pp*, and *ff*.

#### b. Simultaneous Use of Families I and III, mm. 5-6

Example 4.9b shows a musical score for measures 5-6. The score is in 4/4 time and features a tempo of "poco rit.". The score includes dynamic markings such as *cresc.*, *legato*, and *poco rit.*. The piano part shows complex chordal textures with fingerings and articulation marks. The score is divided into sections for Family I (P7, I10) and Family III (P10, I7). The piano part includes markings like *legato*, *cresc.*, and *poco rit.*.

By the *Quasi recit. Rubato* at m. 13, all four families have been stated. Family I, introduced in the beginning two measures of the movement, is used the most (10 times), while families II and III appear frequently (6 and 5 times, respectively). Family IV is used the least: once, when the second theme appears in the violin, mm. 2-4, and again when this theme is stated in the piano, mm. 13-17 (see Table 4.4 below).

**Table 4.4**     **Distribution of Harmonic Areas / Families**

<b>Sections</b>	<b>Measures</b>	<b>Family</b>
<i>Appassionato e rapsodico</i>		
Theme I	mm. 1-2	I
Theme II	mm. 2-4	I, IV
Closing	mm. 4-6	I, III
<i>A tempo</i>	mm. 7-13	I, II, III
<i>Quasi recit. Rubato</i>	mm. 13-34	I, II, III, IV
<i>Energico, violente</i>	mm. 35-41	I
<i>Andante lirico</i>	mm. 42-54	I
<i>Lento</i>	mm. 55 -63	II, III
<i>Più mosso</i>	mm. 64-69	II
<i>Senza misura quasi improvvisando</i>	mm. 69- 83	I, II
<i>Tempo I</i>	mm. 84-95	I, II, III
<i>Violente</i>	mm. 96-100	I

**FORM****4.4. Structure**

While its form fits no clear pattern, I will demonstrate that the first movement of *Sonata* is written in ABA' form. In what follows, I will investigate: the two themes of the A section (mm. 1-34) in terms of their characteristics and motivic-rhythmic development; the B section (mm. 34-83) in terms of rhythmic development and improvisational changes of tempo; and the A' section (mm. 83-100) in terms of the restatement of its themes in independent “harmonic” areas. It is noteworthy that where each new section begins, the twelve-tone series is presented multi-

dimensionally.

### Section A

The first section is divided into two parts, mm. 1-6 and 7-34: The first part presents two themes of contrasting character; the second part restates the two themes and presents their development. Example 4.10 below illustrates these two themes.

#### Example 4.10 Themes I and II as Presented in the Violin, mm. 1-4

The image shows a musical score for a violin, measures 1 through 10. The first six measures are labeled 'Theme I' and are associated with the pitch class P11. The first measure is marked 'f marc.' and contains notes G4, A4, B4, C5, D5, E5, F5, G5. The next five measures continue this series with various intervals and slurs. The last measure of Theme I is measure 6. The next four measures are labeled 'Theme II' and are associated with the pitch class P0. The first measure of Theme II is marked '(pesante)' and contains notes G2, A2, B2, C3, D3, E3, F3, G3. The next three measures continue this series with various intervals and slurs. The last measure of Theme II is measure 10.

The first theme, mm. 1-2, is comprised of the non-repeated twelve tones on which *Sonata* is based. It is followed immediately by the second theme, mm. 2-4, without any link or bridge. The second theme does not present a complete series; instead, it is comprised of the first ten notes of the series P<sub>0</sub>.

Given that the two themes are stated without any link, one might assume these four measures comprise one long theme. Because of their different families, characters, registers, and rhythmic structures, however, it makes more sense to analyze them as two independent themes (see Table 4.5, below). The first theme presents big leaps, played *marcato*, in high register; the second theme starts with three eighth notes, each of which is down-bowed, in low register.

**Table 4.5 Comparison of Themes I and II**

	<b>Theme I</b>	<b>Theme II</b>
<b>Family</b>	I	IV
<b>Register</b>	High	Low
<b>Rhythmic structure</b>	Dotted quarter note+16 <sup>th</sup> note	8 <sup>th</sup> notes, down-bowed
<b>Expression</b>	<i>Marcato</i>	<i>Pesante</i>

**Example 4.11 Motive z**

Between the restatement of the two themes in mm. 7-8 and 13-16, there is an intervening passage (mm. 8-13) which serves to separate them. This passage is developed from a motive (called Motive z) in m. 2 of the violin, and consists of a triplet and an eighth note with the melodic shape [Eb, D, E, C#] and intervals [-1, 2, -3] (see Example 4.11a below).

**a. Theme I and Motive z, mm. 1-2 of the Violin**

The musical notation shows two measures of music in 4/4 time. The first measure contains Theme I, starting with a forte (f) dynamic and marcato (marc.) articulation. The second measure contains Motive z, which is a triplet of eighth notes followed by an eighth note. The melodic shape of Motive z is [Eb, D, E, C#] with intervals [-1, 2, -3].

Motive z is developed extensively after the inversive statement of theme I in mm. 7-8. In this passage, mm. 8-13, the rhythmic figure of motive z is fragmented into an extended set of consecutive triplets (see Example 4.11b, below). The essential rhythmic shape of the motive—the triplet—is maintained, but the melody is freely developed.

### b. Motivic Development of Motive z in mm. 8-13

The musical score for Example 4.12b is presented in two staves. The first staff, measures 8-10, features a complex rhythmic pattern with many beamed notes and rests, marked with a 'martell.' (martellato) instruction. The second staff, measures 11-13, continues this pattern with a 'sempre ff' (sempre fortissimo) marking at the beginning and an 'mf' (mezzo-forte) marking later. Measure numbers 9, 11, and 13 are indicated above the notes.

During the development of motive z in the second part of section A, the pitch-classes continue to be determined by the twelve-tone series presented in the first theme but the motivic development instead centers on the rhythmic patterns rather than the pitch-classes or the intervals. It is common in twelve-tone music to maintain the pitch-classes (or transpose them with slight variations) while reducing, prolonging, or extending the rhythmic figures. In *Sonata*, however, it is not the pitch-classes that maintain a static identity but the rhythmic patterns. Or, in other words, even though the pitch-classes are determined by the twelve-tone series, their ordered positions with respect to the original rhythms are not strictly kept.

### Example 4.12 Statement and Restatement of Theme II in the A Section

In part two of the first section, theme II is developed in two aspects. The first is that an incomplete statement of the theme in mm. 2-4 using ordered positions 1-10 (see Example 4.12a below) is completed when it is restated in mm. 13-16 with ordered positions 1-12. The second involves the adoption, by theme II, of the accompaniment of theme I (see Example 4.12b below; see also Examples 4.4a-b, p.81).

**a. Theme II: Incomplete Statement of Ordered Positions; Violin, mm. 2-4**

Musical score for violin, mm. 2-4. The score is written on a single staff in treble clef. It consists of ten measures, grouped into four pairs. Above the notes, the positions are numbered 1 through 10. The first pair (measures 2-3) is marked *(pesante)*. The second pair (measures 4-5) is marked *(tempo)*. The third pair (measures 6-7) is marked *(pesante)*. The fourth pair (measures 8-9) is marked *(tempo)*. The notes are: m. 2: G4, A4; m. 3: B4, C5; m. 4: D5, E5; m. 5: F5, G5; m. 6: A5, B5; m. 7: C6, D6; m. 8: E6, F6; m. 9: G6, A6; m. 10: B6, C7.

**b. Complete Statement of Theme II with Ordered Positions 1-12 in the Violin and Tetrachords (0147) and (0134) in the Piano, mm. 13-16**

Musical score for violin and piano, mm. 13-16. The score is written on two staves. The violin staff is in treble clef, and the piano staff is in grand staff (treble and bass clefs). The tempo is marked *Quasi recit. rubato* ( $\text{♩} = \text{c.}54\text{-}58$ ). The violin part is marked *mf sonore* and includes performance instructions: *vibr. sul D* (measures 13-14), *stent.* (measure 15), *sost.* (measure 16), and *a tempo.* (measure 16). The piano part includes performance instructions: *f* (measures 13-14) and *mf* (measures 15-16). The violin part is divided into four measures, each containing a tetrachord: (0147) in measures 13-14, (0134) in measure 15, and (0134) in measure 16. The piano part is divided into four measures, each containing a tetrachord: (0147) in measures 13-14, (0134) in measure 15, and (0134) in measure 16. The notes are: m. 13: G4, A4; m. 14: B4, C5; m. 15: D5, E5; m. 16: F5, G5.

Later, the second theme is further developed by using broken chords in the accompaniment (see Example 4.12c below) and tremolos in both of the instruments in interval-classes 1 and 3 (see Example 4.12d below).



## Section B

While Section B, mm. 34-83, retains the pitch-classes and certain rhythmic elements of the previous section, its improvisational aspects make it distinct from Section A, as does the fact that themes I and II are developed beyond recognition.

After a fermata in m. 34, the B section begins with both instruments marked *Energico, violente*. Interval class 1 is used extensively in both instruments in big leaps as well as in chords, mm. 35-36. This is followed by the *Andante, lirico*, mm. 42-54. This passage, with the melody in the violin accompanied by broken chords in the piano that are to be played “floating” without pressure, demonstrates the lyrical aspect of the music.

**Table 4.6 The Subdivisions of Section B**

Character Markings	Measures
<i>Energico, violente</i>	mm. 35-41
<i>Andante, lirico</i>	mm. 42-54
<i>Lento</i>	mm. 55-57
<i>Movendo</i>	mm. 57-64
<i>Più mosso</i>	mm. 64-69
<i>Senza misura quasi improvvisando</i>	mm. 69-71
<i>Senza misura furioso</i>	mm. 72-75
<i>Improvvisando, senza misura</i>	mm. 76-83

The *Andante, lirico* is followed by a *Lento*, a *Movendo*, and a *Più mosso*. It is in the *Più mosso* that the consecutive triplets of mm. 8-13 are again used to lead into the *senza misura quasi improvvisando* in m. 69. The improvisational parts of Section B take place in the last three

passages: the *senza misura quasi improvvisando*, followed by the *senza misura furioso*, ending with the completely free improvisational *Improvvisando, senza misura*, where both players are asked to improvise for approximately 15-20 seconds.

The improvisational character of these last three passages is the highlight of Section B and causes it to stand out from the A and A' sections. Moreover, though B uses the same pitch-classes as A, it is difficult to identify the motives of the two themes of A in B. It makes more sense, therefore, to identify B as an independent section.

### Section A'

When themes I and II return in the A' section, they are presented in different families and inversions. Table 4.7 below compares these families across the two sections A and A'.

**Table 4.7 Themes I and II, their Harmonic Areas / Families by Section**

Section	Theme I: Harmonic Areas	Theme II: Harmonic Areas
A	Family I	Family IV
A'	Family II	Family I

### Example 4.13 The Families Used for the Two Themes in A and A'

Note that whereas in A (mm. 1-4), theme I (P<sub>11</sub>) is in family I and theme II (P<sub>0</sub>) in family IV (see Example 4.13a below), in A' (mm. 83-87), theme I is in family II and theme II in family I (see Example 4.13b below). Because family I is used more than any other, and because it is presented at the very beginning and end of this movement, I will say that it functions as the “tonic” family of *Sonata*.

a. Families I and IV, mm. 1-4 of Section A

Family I (P11) covers measures 1-12. Family IV (P0) covers measures 1-10. The score includes markings for *f marc.*, *(pesante)*, and *(tempo)*.

For the A' Seiber chose, not only contrasting families, but also contrasting forms for the melodic contour of the themes: here they are presented in inversions forms  $I_0$  and  $I_{10}$ .

b. Families II and I, mm. 83-87 of Section A'

Tempo I (♩ = 72-76). Family II ( $I_0$ ) covers measures 83-12. Family I ( $I_{10}$ ) covers measures 83-12. The score includes markings for *f* and *(pesante)*.

**Example 4.14 Multi-Dimensional Presentations at the Beginnings of Sections A, B, and A'**

It is also noteworthy that at the beginnings of sections, Seiber presents the series multi-dimensionally. He does this in two ways: in the first, by combining three tetrachords in the violin with six tetrachords in the piano; in the second, by combining two hexachords of the violin with two hexachords in the piano. The first of these is used at the beginnings of A and A' (see Examples 4.14a and 4.14c below); the second is used at the beginning of B (see Example 4.14b below).

a. Series P<sub>11</sub>: Section A, mm. 1-2

Appassionato e rapsodico (♩ = 72-76)

1 2 3 4 5 6 7 8 9 10 11 12

*f marc.*

*f marc.*

*piano*

*>*

*pesante*

P11 P11 P11

b. Series I<sub>10</sub>: Section B, mm. 35-37

Energico, violento (♩ = c.76)

1 2 3 4 5 6 7 8 9 10 11 12

*f*

*f*

*string.*

*tempo*

*stent. rubato*

*tempo*

*sul A*

*f*

*quasi sf*

*quasi sf*


I10 I10 I10

c. Series I<sub>0</sub>: Section A' mm. 83-85

Tempo I (♩=72-76)

Finally, the first movement of *Sonata* is punctuated throughout by tempo changes and metronome markings. The opening measures of A, for instance, begin under a fast *Appassionato e rapsodico* marking, followed by a slower *Quasi recitativo rubato*, and the even slower *Molto lento* (see Table 4.8 below). The pace of the music then slowly speeds up and slows down again in the following four passages, as if by *accelerando* and *ritardando*. These changes of tempi are carefully planned so as to give the music an overall sense of gradually speeding up and slowing down.

**Table 4.8 The Tempo Indications of the First Movement**

Sections	Measure #	Character	Tempo Markings: 
A	mm. 1-13	<i>Appassionato e rapsodico</i>	72-76
	mm. 13-26	<i>Quasi recit. Rubato</i>	c.54-58
	mm. 26-28	<i>Molto lento</i>	c.42
	mm. 28-34	<i>Movendo</i>	c.60
B	mm. 35-41	<i>Energico, violente</i>	c.76
	mm. 42-54	<i>Andante, lirico</i>	60-56
	mm. 55-57	<i>Lento</i>	c.56
	mm. 57-64	<i>Movendo</i>	c.66
	mm. 64-69	<i>Più mosso</i>	c.72
	mm. 69-71	<i>Senza misura quasi improvvisando</i>	
	mm. 72-75	<i>Senza misura furioso</i>	
	mm. 76-83	<i>Improvvisando, senza misura</i>	
A'	mm. 83-95	<i>Tempo I</i>	c .72-76
	mm. 96-100	<i>Violente</i>	c.76

## **THE REMAINING MOVEMENTS**

### **4.5. The Second Movement**

The second movement is rondo-like in form, with every occurrence of the A section being highly developed; it is also the only movement of *Sonata* in which improvisation plays no part. Both instruments have lots of short, staccato notes that give the music as a whole a light and vivid character. The twelve-tone series of the first movement—save for one passage—is retained, but Seiber does not adhere to the rhythmic patterns of the first movement. In many passages of the second movement, the accompaniment takes its melodic motives from the violin, in contrast

to the first, in which the accompaniment mostly uses variations of set-classes (0134) and (0147). The four families of the first movement are retained in the second.

In the second movement the twelve-tone series is presented in the opening measures of the violin. Rather than use a prime form, Seiber uses the inversional form  $I_{10}$  for the presentation of the theme. The rhythmic shape of this theme may be associated by its use of consecutive eighth-notes with the second theme of the first movement. The grace note before the first eighth-note gives this theme a dance-like character (see Example 4.15 below).

#### Example 4.15 The Opening of the Second Movement, mm. 1-6

The image shows a musical score for the opening of the second movement, measures 1-6. The tempo is 'Grazioso, danzato' with a metronome marking of quarter note = 63-66. The score is for violin and piano. The violin part starts with a grace note followed by a series of eighth notes. The piano part provides accompaniment. There are some markings like 'R7' and 'P11' in boxes.

The texture in this movement also differs from that of the first. Whereas in the first, (0134) and (0147) tetrachords were mostly used either in chords or broken chords, in the second movement, there are many places where the piano has either the same melody as the violin or it imitates the violin's part without exactly re-stating it. Thus, in the first movement, the melody belonged primarily to the violin; in the second, it is more evenly distributed between violin and piano. As a whole, the melodic aspect of the series dominates this movement

There is one passage in the second movement, mm. 91-97 of the piano, that cannot be

mapped onto the series (see Example 4.16 below). While the violin plays an upward-progressing melody corresponding to the original twelve-tone series, the piano begins with a one-note sonority, A (i.e., ordered position 1 of  $R_7$  in the violin), and proceeds to add a note to each successive sonority. After the initial stroke of the A, the second stroke in m. 92 consists of two notes, [C#, D], followed by [F, F#, G], [A, Bb, B, C], [C, C#, D, D#, E], [D, D#, E, F, F#, G#] and [F, Gb, G, Ab, A, Bb, B].

#### Example 4.16 An Exceptional Passage, mm. 91-97

The image shows a musical score for violin and piano. The violin part is marked "Più allegro (♩ = c. 84)" and features a series of chords labeled  $R_7$  and  $I_{10}$ . The piano part is marked  $p$  and "cresc. poco a poco". The score includes fingerings and dynamics.

These chords are independent of the twelve-tone series and cannot be mapped onto it. While the violin expresses series-forms  $R_7$  and  $I_{10}$ , the piano has its own pitch-classes that are not part of any series.

The four families of the first movement are also employed in the second. Like the first movement, the second begins and ends in family I—the “tonic” family of *Sonata*—and like the first, the second employs family I more than the others. The progression through the families of the second movement, I-III-II-IV-I, including the return to the tonic at the end, is analogous to modulation in the classical sense.

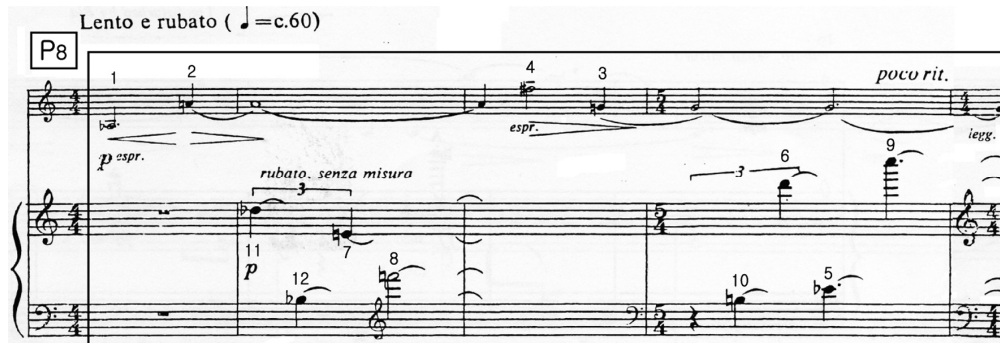
In the first movement, the four families were used either in combination (i.e., two families simultaneously) or in alternation. In the second movement, the use of the families is more straightforward, and at no time are two families used simultaneously. Instead, one family is presented for a certain number of bars and then replaced by another family.

Save for the two passages that cannot be mapped onto to the twelve-tone matrix, the arrangement of pitch-classes in the second movement is rather conventional; both instruments express their motives in a straightforward manner. Seiber, moreover, discontinues use of the multi-dimensional presentation.

#### **4.6. The Third Movement**

The third movement, in the form of Introduction-A-B-A-B-A-Coda, is slow and calm in character. Like the first movement, it is improvisational, if not quite as freely, and it continues to use the twelve-tone series of the first movement. It differs from the first two movements, however, in four respects: (a) at the beginning of the movement, the twelve-tone series is distributed among both instruments; (b) there is thematic material that does not belong to the original twelve-tone series; (c) there is another theme that appears canonically between violin and piano and is reminiscent of a slow fugue with the Countersubject in the left hand of the piano; and (d) the tonic family of this movement is family IV.

**Example 4.17 Opening of the Third Movement, mm. 1-5: Single-Dimensional Presentation of P<sub>8</sub>**



Seiber presents his series in different ways depending on the movement: in the first, he presents it multi-dimensionally; in the second, he presents three different series simultaneously. At the beginning of the third movement, the series is presented single-dimensionally, that is, the full series does not appear independently in either violin or piano; only when both parts are combined is the series complete (cf. Chapter 3, p. 54). At the opening of the third movement, the ordered positions of P<sub>8</sub> are distributed among violin and piano in such a way that the whole series takes five measures to be fully stated (see Example 4.17 above).

**Example 4.18 Thematic Material in the Violin, mm. 5-9**



After statement of the opening theme, there is an interlude in mm. 5-9 (see Example 4.18 above) with thematic material that cannot be mapped onto the twelve-tone matrix. This passage appears five times in the third movement, always separated by passages of the original series. Both pitch-classes and melodic contour of this theme differ each time it appears, but it always starts with ordered positions 1, 9, 4, and 6 of a series-form. With every statement, the material is varied, though the rhythmic shape is not altered until the last statement.

#### Example 4.19 The Canonic Theme of mm. 22-25

Molto calmo (♩ = c. 66)

I10 1 2 3 4 5 6 7 8 9 10 11 12 R7 1 2 4

*p sotto voce*

I10 1 2 3 4 5 6 7 8 9 10 11 12 R7 1 2 4 3 7 5

*p sotto voce*

I10 1 2 3 4 5 6 7 8 9 10 11 12

Example 4.19 above illustrates a three-voice canonic theme, consisting of two eighth and two quarter notes, that occurs between violin and piano in mm. 22-29. The canon begins in the right hand of the piano, followed by the violin and the left hand of the piano. The pitch-classes are the same in all three voices, and are all part of family I.

The canon is repeated in mm. 43-50, this time in family III. The left hand of the piano starts the canon, followed by the right, and then the violin. The beginning pitch-class of each voice is Bb as it was in mm. 22-29, but the registers are different, and the melody is inverted.

Like the first and second movements, the third employs all four families, but they are presented in different order. Both first and second movements begin and end in “tonic” family I; the third movement, however, begins and ends in family IV. And whereas family IV was originally introduced in theme II of the first movement, in the third movement it has become the new “tonic.”

Finally, while the use of rubato in the third movement is reminiscent of the first, the arrangement of pitch-classes, thematic material, and its use of families give the third movement a character that differs from the others.

## **CONCLUSION**

Seiber was at the peak of creative abilities as he composed *Sonata* and he brought his concept of family to its most sophisticated level. As in *Concert Piece*, he partitions the series-class of *Sonata* into families, but here the partition results in four families, which he uses to represent what in tonal music would be called harmony—what I have called “harmonic areas.” His use of these harmonic areas is more advanced than in *Concert Piece*. For the first time, Seiber begins to treat certain families as “tonic,” and proceeds to move between them as if by modulation, even returning to the tonic at the conclusion. In the first movement, he uses family I as the tonic family, and after modulating to the other harmonic areas, returns to the tonic. He does the same in the third movement, but now uses family IV to represent tonic. After modulation to the other areas, it too returns to the tonic.

Not only is the use of families more carefully planned than in *Concert Piece*, the arrangement of pitch-classes in *Sonata* is also developed in a way that is unique. Rather than deciding the pitch-classes merely on the basis of the twelve-tone series, he creates certain patterns from them that are implied in their ordered positions.

In this study, I have performed a close analysis on three twelve-tone compositions by Mátyás Seiber: *String Quartet No. 2* (1934-5), *Concert Piece for Violin and Piano* (1953-4) and *Sonata for Violin and Piano* (1960). All three are serial compositions that employ Seiber's unique compositional language of family and permutation. Examination of these three works provides insight into how this language developed and matured during the twenty-six years that separate the *Sonata* from the *String Quartet*.

Throughout these three works, Seiber's compositional technique becomes ever more systematic and complex. What was introduced in the *String Quartet No. 2* and developed in *Concert Piece for Violin and Piano*, reached its zenith in the *Sonata for Violin and Piano*. We will never know whether he would have surpassed *Sonata* in a subsequent composition, though it seems almost certain that his compositional style would have continued to develop had he not tragically been killed in 1960 shortly after completing *Sonata*. It is a shame that there is not more of this fascinating music, and where he might have gone with it is a poignant, if unanswerable, question.

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